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Delineation
Report

BART-San Francisco Airport Extension [1995]
Draft Environmental Impact Report/
Supplemental Draft Environmental Impact Statement

Wetlands Delineation Report

Prepared for:

BART / SamTrans

Prepared by:

Ogden Environmental and Energy Services Company

221 Main Street, Suite 1400
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January, 1995

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BART-San Francisco Airport Extension
Draft Environmental Impact Report/
Supplemental Draft Environmental Impact Statement

Wetlands Delineation Report

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BART-San Francisco
Airport extension :
1995.

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1. SUMMARY

This report presents the results of a Section 404 jurisdictional determination of the extent of waters and wetlands within the proposed route and facilities of the BART extension to the San Francisco International Airport (SFIA). The report identifies wetlands that may be impacted by or used as a wetlands mitigation site. The jurisdictional determination was based on photo-interpretation of a black-and-white aerial photograph taken on October 16, 1993, and enlarged to a scale of 1:2400 and on field survey work.

Waters and wetlands found in the project corridor include flood control drainage canals (Cupid Row Canal, San Felipe-South Lomita Drainage Channel, and Millbrae Canal), seasonal pools and ponds, and intermittent native creeks (Colma Creek) and tributary channels. The largest extent of wetlands and waters in the project corridor occur on the SFIA property west of Highway 101 referred to as the west of Bayshore parcel. The US Army Corps of Engineers (ACOE) has reviewed the data forms and maps presented in this report and has verified the results. The ACOE verification letter is presented in Appendix A.

2. INTRODUCTION

2.1 PROJECT SITE LOCATION DESCRIPTION

Figure A in Appendix C shows the location of the proposed project corridor with respect to the surrounding region. The west of Bayshore parcel site is bounded on the east by the portion of Highway 101 adjacent to the San Francisco International Airport and, to the west, by 7th, Huntington, and San Bernardino Avenues. The north and south boundaries are San Bruno Avenue and Millbrae Canal, respectively.

2.2 PHYSICAL AND HYDROLOGIC CONDITIONS

Topography

The proposed BART extension is located in northern San Mateo County. The northern two-thirds of the project corridor is within the Colma Creek drainage basin, and the southern one-third is within the San Francisco Bay flatlands. The difference in elevation ranges from 200 feet mean sea level (msl) at the western portion of the corridor sloping to the east to approximately sea level within the San Francisco Bay flatlands and the west of Bayshore parcel at the eastern end of the corridor.

The San Francisco Bay flatlands are characterized by a broad alluvial plain just south of Colma Creek. The alluvial plain is highly urbanized, bounded by shoreline tidal marshland features along San Francisco Bay. The alluvial plain ranges from sea level to less than 100 feet msl. Drainage is controlled by a system of storm drains and lined creek beds.

Shoreline features consist of tidal marshlands that are subject to periodic inundation and exposure during high and low tides. The west of Bayshore parcel and other SFIA property is elevated above tidal marshlands by artificial fill. Drainage within this area is typically very poor.

Soils

The near surface soils within the alluvial valley of Colma Creek consist of sediments from the Merced and Colma Formations. The Colma Formation extends below the San Francisco Bay flatlands where it is overlain by recent deposits of San Francisco Bay Mud and artificial fill materials. The project corridor is further characterized by localized deposits of slope wash and ravine fill materials.

The Bay muds are buried below artificial fill materials to as much as 85 feet in some areas. Bay Mud consists of soft to very soft, highly plastic clay to silty clay, which is compressible when structures are placed on the surface.

The west of Bayshore parcel includes "Urban Land-Orthents, reclaimed complex" soils that have low runoff characteristics. These soils are very shallow to very deep, very poorly drained to excessively drained on alluvial fans, coastal terraces, floodplains, and tidal flats.

Past Land Use and Surface Hydrologic Conditions

Prior to 1939, bay muds extended up to the railroad tracks along the western edge of the site. Between Millbrae Avenue and San Bruno Avenue, four natural creeks drained into the area. The project corridor contained many sloughs.

By 1939, the Bayshore Highway was built east of the existing Bayshore Freeway (Highway 101). Three canals were constructed running east of and below the Bayshore Highway. The northernmost canal ("D") extended from Pine Street, at the extreme north end of the site, out to the San Francisco Bay. The second canal ("A"), called the Lomita Canal, ran west towards San Felipe Avenue, ending before reaching the railroad tracks. A spur ran south to an existing slough. The third canal ("E") extended east from near the end of San Diego Street, then north, then east again out to the San Francisco Bay.

The area between Pine Street and San Bruno Avenue appears to have been disked and much of it was in agricultural production. The larger sloughs remained in place, however. Beyond Pine Street (south) in Millbrae, the area east of the railroad tracks appears to have been native baylands. At this time, Belle Air and Lomita neighborhoods of San Bruno had already been constructed.

By 1941, the Lomita Canal had been extended to the railroad tracks and beyond in a northern extension to the western portion of the Cupid Row Canal. PG&E power lines had been installed in the area by this time.

By 1944, the North Millbrae #1 and Marino Vista developments in Millbrae had been constructed. The Bayshore Freeway and the westward and eastward airport expansion were still in the planning stages.

Site characteristics changed little between 1944 and 1946. The Bayside Manor neighborhood in Millbrae had not yet been built.

By 1948, the Bayshore Freeway had been built, the SFIA expansion project was underway, and the SFIA lands west of the Freeway had been defined. The airport interchange, however, was not yet complete. Canal "D" had been cut off by the San Bruno Avenue interchange. Freeway construction and the SFIA expansion had cut into the Lomita Canal ("A"), which was rerouted along the west side of the freeway running south to Millbrae Avenue. Canal "E" had been eliminated by the airport interchange. The Bayside Manor neighborhood project was completed.

Except for the Freeway and Millbrae neighborhoods, there was not a significant amount of fill in the project corridor. A minor amount of fill may have occurred in the area of the Lomita Canal ("A"). Sloughs could still be seen west of the Freeway, as could eucalyptus trees along the railroad tracks.

Between 1949 and 1961, the Cupid Row Canal and the new San Felipe-Lomita Canal were built. Sloughs were still visible and fill was limited to very small areas.

In 1969, the San Francisco Public Utilities Commission completed drawings for the expansion of First Street, San Felipe Avenue, and Rollins Roads onto the site. These drawings show the construction of a drainage channel north of the Central Pump Station and a system of drainage culverts along San Felipe Avenue and Rollins Road. The Lomita Canal is shown on the drawings in its present location and the old San Felipe-Lomita Canal is shown centrally located on the site. These features were constructed as planned, however the roadways were never constructed.

By 1972, the area west of the PG&E power lines had been filled and the Lomita Canal relocated. The fill was likely placed in 1969-1970 from the Serramonte Shopping Center as suggested by Mel Leong (Assistant Deputy Director, Environmental Control Branch San Francisco International Airport). Larger sloughs still existed east of and under the power lines.

By 1974, the area west of the transmission tower had been filled. Sloughs were still visible under the transmission towers, suggesting fill in these areas had not progressed to the present condition. An earthen ditch had been dug north of the central pump station and the South Lomita Canal was in its current alignment.

By 1975, areas east of the transmission towers had been filled or at least cleared and graded. The areas immediately underneath the tower remained undisturbed.

Between 1976 and 1984, there were few changes to the site. With the passage of the Clean Water Act in 1977, the site passed under the jurisdiction of the COE.

By December of 1979, a dredge clearing the South Lomita Canal had been constructed. The areas west of the canal were graded or cleared and shallow wetlands dotted the site.

In May 1984, the far south end of the area was graded and the soil disturbed. The vegetation, by this time, had become more complex, similar to the mix that can be found there today.

In August 1985, CALTRANS had begun construction of the Highway 101 flyover and was using much of the area filled in 1975, east of the PG&E power lines, as staging areas. The flyway and associated shoulders apparently reduced the area east of the towers to some extent.

From 1988 to the present, there do not appear to have been any significant changes to the site.

3. REGULATORY BACKGROUND

This section provides limited information about the regulatory basis for this assessment of Corps jurisdiction. It includes a statement of the hydrologic parameter requirements specified in the current Corps wetlands delineation manual (Environmental Laboratory, 1987).

3.1 DEFINITIONS

Waters of the United States

Waters of the United States include "lakes, rivers, intermittent streams, mudflats, sandflats, sloughs, prairie potholes, wet meadows, playa lakes, and natural ponds the use, destruction, and/or degradation of which could affect interstate or foreign commerce" [Section 33, Code of Federal Regulations, Part 328.3(a)(3)].

The lateral extent of the Corps of Engineers' jurisdiction over lakes and drainages with defined beds and banks is the ordinary high water mark. Jurisdiction extends beyond ordinary high water where adjacent wetlands are present.

Isolated wetlands, such as seasonal wetlands that are not adjacent to or hydrologically connected to drainages that carry an average annual flow of five cubic feet per second (cfs) (and are, therefore, above the headwaters) can also be waters of the United States. Jurisdiction over isolated waters is predicated upon the Commerce Clause of the Constitution. However, interstate commerce must actually be affected before the federal government can exercise its authority. Legal Counsel to the EPA has stated that a particular wetland may not be known from direct observation to support birds protected by the Migratory Bird Act (or which otherwise cross state lines during migration), but it is subject to Corps' jurisdiction if it shares characteristics with other wetlands that are known from documented records to be used by such birds (Blake, 1985).

Wetlands

For the Corps to regulate an area as a wetland under Section 404 of the Clean Water Act, it must be "inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions does support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [33 CFR 328.3(b)] (Federal Interagency Committee for Wetland Delineation 1989). Three criteria determine whether an area satisfies the definition under "normal conditions." Under normal circumstances, hydrophytic vegetation, hydric soils, *and* a wetland hydrologic regime must be present for an area to be a wetland.

Hydrophytic Vegetation. Hydrophytic vegetation is dominated by macrophytic plants adapted to wetland inundation or saturated soils because of physiological and reproductive adaptations. The USFWS National Wetlands Inventory has used field observations, expert opinion, and technical documents to identify hydrophytic plant species and has developed wetlands species lists those which identify species which occur in wetlands (Reed 1988).

Hydric Soil. A hydric soil is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part (U.S.D.A. Soil Conservation Service, 1986). In non-sandy soils, prolonged anaerobic conditions cause chemical reactions, evidence of which can include sulfidic material, reduced soil conditions, an aquic or peraquic moisture regime, a gleyed soil matrix chroma, bright mottles and/or low matrix chroma, and iron and/or manganese concretions.

In conjunction with the Soil Conservation Service, the National Technical Committee on Hydric Soils has developed a list of hydric soils (U.S.D.A. Soil Conservation Service, 1986). **The soil series that occurs in the project corridor is not listed as a hydric soil.**

Wetland Hydrology. Wetland "hydrology" implies a hydrologic regime involving periodic inundation or soil saturation to the surface for some period during the growing season. Ponded or standing water for seven or more days indicates wetland hydrology (soils with compacted surfaces may be inundated but still not saturated because of extremely low infiltration rates). **Given the depth of rooting on the project site, soil saturation at a depth of 18 inches was assumed to affect the vegetation.**

Field evidence can include live or dead plant material matted on the ground surface or draped over rocks; soil cracks associated with shrinking and swelling; sediment deposits; deep cattle hoof prints and soil "pedestals" standing above the surrounding ground (indicating periods of long saturation and compaction during the cattle grazing season); algal staining or algal crusts; water marks and drift lines; the eggs of frogs, salamanders and other amphibians known to breed in standing water; and freshwater clams and snails and other aquatic invertebrates. Coupled with field evidence, photographic evidence of surface inundation can be employed to confirm a wetland hydrologic regime.

3.2 RELATED JURISDICTIONAL ISSUES

Jurisdiction over Isolated Waters

As of October 5, 1984, with the implementation of its settlement agreement final regulations, the Corps began to regulate the discharge of fill into isolated waters. The 1984 draft regulations also included the permit, N26, for the discharge into isolated waters and other waters above the headwaters. The regulation of isolated waters hinges on the Migratory Bird Species Act. Lacking information about migratory bird use, Corps assumes jurisdiction over seasonal wetlands, including seasonal pools and ponds, that are isolated or above the headwaters.

The San Francisco District of the Corps operates under the assumption that jurisdiction exists over isolated wetlands.

Limits of Jurisdiction in Drainages (and Ditches)

A drainage with a defined bed and banks may overflow occasionally but it may also convey only a small flow volume in an active channel below and much narrower than the top-of-bank to top-of-bank width. The lateral limits of the active channel or ordinary high water may, however, be less than or greater than the width of the bed.

Jurisdiction Over Ditches and Artificial Waters

The Corps does not normally regulate the discharge of fill into drainage or irrigation ditches that have been excavated on dry ground. Such ditches are not typically considered to be waters of the United States. However, the Corps and the Environmental Protection Agency reserve the right to regulate the discharge of fill into such ditches on a case-by-case basis.

A wetland or body of water need not be natural to be regulated. Corps jurisdiction covers artificially created waters and wetlands that exist without the annual input of human energy. According to Corps practice, ditches excavated on dry ground as part of an irrigation or drainage system are not subject to Corps jurisdiction but sections of natural drainages which have been realigned (ie., to the edge of a field or around valuable facilities) are considered to remain jurisdictional.

As long as ditches excavated on dry ground serve their intended function, they are not considered jurisdictional. If a ditch or ditch section is abandoned or land use practices disconnect it so that it no longer receives water or delivers it to another ditch or jurisdictional channel, jurisdiction may exist but only if the abandoned or isolated section supports jurisdictional wetlands.

4. METHODS

4.1. FIELD MAPPING AND AREA ESTIMATION

A black-and white aerial photograph taken on October 16, 1993 and enlarged to a scale of 1:2400 was used to locate and delineate identified waters and wetland areas. The photograph was ordered at a time when most of the depressional sites held standing water. The photograph was used in the field to identify potential sample site locations and to determine the shape and boundaries of wetland sites. Field work to support the jurisdictional determination was conducted in a series of visits made between July 1993 and April 1994.

The status and limits of wetlands were determined using methods for routine on-site determinations consistent with those outlined in the Corps wetland manual (Environmental Laboratory, 1987). Data at sampled sites were collected and entered onto copies of the standard form modified for use in single-story herbaceous vegetation. Abundant subdominant species at each site were also identified and listed on the data forms to support the decision regarding definitional status. The data forms were entered onto computerized version of the forms, which are contained in Appendix B of this report.

The width and depth of defined channels were measured in the field as were the widths of wetlands within their limits. Any wetlands present may be narrower than the area below ordinary high water that is jurisdictional. Area estimates for channel sections and channel wetlands were obtained by taking the product of average width and section length and summing the products. Wetland areas were calculated using a planimeter. The area of each polygon was measured in square feet and totals are presented in increments of 0.01 acre.

4.2 HYDROLOGIC MONITORING

Because the soils at the west of Bayshore parcel are imported fill and thus highly variable, the Army Corps of Engineers (ACOE) felt that more hydrology data needed to be collected in the wet season. Mr. Dan Martel of the ACOE reviewed a portion of the initial wetland delineation work and visited the site with Ogden's biologist (Mr. Ricardo Villasenor) on February 9 and 11, 1993.

To investigate the hydrologic regime on the west of Bayshore parcel, a series of 19 piezometers, 3 inches in diameter, was excavated to a depth of 24 inches using a post-hole digger between February 24 and March 3, 1993, before the start of the field monitoring work. The holes were excavated at sites representative of transitional zones and microtopographic conditions at those sites on the property where the vegetation and soils indicators were not definitive. The selected locations for each piezometer were verified and approved by Mr. Martel. These sites were used to collect data on the period of inundation and period and depth of soil saturation during the rainy season, after approximately 58 percent of the normal annual rainfall had occurred The locations of the monitoring sites are marked on the maps showing the distribution of jurisdictional wetlands and other waters (Appendix C) (note that not every hydrologic monitoring site was located in habitat determined eventually to be a jurisdictional wetland).

The piezometers were monitored every two weeks between March and April. The data collection effort was designed to extend through May but given the fact that there was not any appreciable rain in the first three weeks of April (0.16" at SFIA), monitoring of all the piezometers was suspended. Mr. Martel concurred with the decision to suspend montoring.

Hydrologic data collected according to the above procedure were used to characterize the hydrologic regime and to provide general correlational support for decisions regarding "wetland hydrology" and jurisdictional status where field indicators of wetland hydrology were limited.

5. RESULTS OF HYDROLOGIC MONITORING

5.1 RAINFALL RECORDS

Table 1 shows the daily rainfall record during the monitoring period. The data were obtained from the San Francisco Chronicle for a gage at the San Francisco International Airport. Approximately 1.48 inches of precipitation fell during the monitoring period, most in small amounts during the monitoring period.

5.2 MONITORING RESULTS

The records of the hydrologic monitoring program are contained in Table 2. The average annual rainfall in the vicinity of the project site is estimated to be between 19 and 20 inches. The total rainfall at the weather station at the San Francisco International Airport was 12.69 inches at the time the monitoring was halted. The rainfall for this year was below normal and most of it occurred in the early winter months.

Monitoring did not start until the growing season was underway and approximately 50 percent of the normal rainfall had occurred. However, the period immediately following the start of monitoring was very dry and the year was considered a drought year. As a result, the starting point of the monitoring program provided the best results in terms of evaluating the level of inundation and soil saturation below the ground surface.

As the Corps manual (Environmental Laboratory, 1987) states, a wetland hydrologic regime is characterized by inundation or soil saturation to the surface for some period during the growing season. Ponded or standing water for seven or more days indicates wetland hydrology. A hydric soil is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that would have an effect on the vegetation (U.S.D.A. Soil Conservation Service, 1986), assumed to be the upper 18 inches of the root zone.

Table 2 shows that the combined period of inundation and soil saturation within at least 18 inches of the surface exceeded 25 consecutive days at Well 11, and 39 consecutive days at Wells 13 and 14 which appear to be wetlands. Unfortunately, the dry season precluded the collection of definitive data for Wells 5, 9, 10, 16 and 18 all of which were saturated within 18 inches of the soil surface at when the monitoring was initiated but quickly dropped below 18 inches. Wells 6, 8 and 19 were vandalized and thus adequate data for these wells were not available. The data do suggest that Wells 1, 2, 3, 4, and 17 appear to be non-wetlands because at no time during the monitoring effort were the soils saturated within 18 inches of the ground surface.

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Table 1
Rainfall During the Hydrologic Monitoring Period
(February - April 1993)

Date	Daily rainfall (inches)	Total Yr.(inch)
Feb 26	0.16	11.86
Feb 27	0.01	11.87
March 15	0.01	11.88
March 21	Trace	11.88
March 22	0.05	11.93
March 24	0.02	11.95
March 25	0.16	12.11
April 8	0.01	12.12
April 9	0.30	12.42
April 23	0.25	12.67
April 24	0.02	12.69

Total annual rainfall (in): 12.69

Average annual rainfall (in): 19-20

Normal Year to Date (in): 19.26

Percentage of Normal Year to Date (in): 66%

BART-SFO EXTENSION PROJECT GROUNDWATER MEASUREMENTS

TABLE 2 RESULTS OF HYDROLOGIC MONITORING

WELL #	DEPTH (In inches of Well from Soil Surface)	3/3/94 (Depth of Water/ No. Inches bgs)	3/9/94 (Depth of Water/ No. Inches bgs)	3/18/94 (Depth of Water/ No. Inches bgs)	3/28/94 (Depth of Water/ No. Inches bgs)	4/11/94 (Depth of Water/ No. Inches bgs)
1	25.5	5.5/20	2/23.5	2.5/23	1.5/24	1.5/24
2	25.5	2.5/23	1/24.5	0.5/25	1.5/24	1.5/24
3	25.5	5.5/20	1.5/24	0.5/25	0.5/25	2/23.5
4	24.5	2.5/22	2/22.5	2/22.5	2/22.5	2/22.5
5	26	**17/9**	**8/18**	2/24.5	2/24	1/25
6	25.5	3.5/22	<1/25	Well removed	Well Removed	Well Removed
7	26	**16/10**	4/22	2.5/23.5	2/24	2.5/23.5
8	25.5	2.5/23	Well removed	Re-installed	2/23.5	Well Removed
9	25.5	**8.5/17**	6/19.5	5.5/20	1.5/24	2.5/24
10	25	**14/11**	5/20	1.5/23.5	1/24	2.5/22.5
11	25.5	**15.5/10**	**14/11.5**	**12/13.5**	**10.5/15**	7/18.5
12	25.5	**12.5/13**	2/23.5	1/24.5	2/23.5	2/23.5
13	25	NW	**15/10**	**12.5/12.5**	**10/15**	**9.5/16**
14	25	**17/8**	**16/9**	**13/12**	**11/14**	**10/15**
15	24	NW	**7.5/16.5**	4.5/23.5	3/21	2/22
16	25.5	**9.5/15.5**	2.5/23	2/23.5	2/23.5	1/24.5
17	25.5	No water in well	No water in well	<0.5/25	2/23.5	0.5/25
18	25	NW	**9.5/15.5**	2.5/22.5	1/24	2/23
19	26	NW	**8/18**	1.5/24.5	Well Removed	Well Removed

NOTES:

bgs=below ground surface

NW = New Well

6. JURISDICTIONAL WATERS, TYPES, AND DISTRIBUTION

The result of the photographic interpretation and field survey is a map of the waters and wetlands that occur on the property. The distribution of these features is shown on the map contained in Appendix C of this report.

Appendix B contains the data sheets (Data Form for routine on-site determination method) completed in the field at approximately 220 sites in support of the assessment. The locations of the sites where data were collected are shown on the maps contained in Appendix C of the report.

6.1 TYPE DESCRIPTIONS AND DELINEATION RATIONALE

This section contains brief descriptions of each type of jurisdictional habitat and discussions of the assumptions regarding jurisdiction where necessary.

Seasonal Wetlands

Seasonal wetlands of obviously artificial origin occur throughout the west of Bayshore parcel where past development activities have left depressions on the topography or were planned and created. Other seasonal wetlands occur along realigned drainages and where past grading activities produced barriers that encourage surface ponding, particularly near Highway 101 on the west of Bayshore parcel. Other seasonal wetlands occur in hydrologically isolated sites and in swales (undefined drainages) along the proposed project corridor.

The isolated wetlands contain many of herbaceous plant species including Mediterranean barley, curly dock (Rumex crispus), and hyssop loosestrife are often dominant species. Species typically found in surrounding upland habitats, such as soft chess (Bromus mollis), three species of tarweed [(Hemizonia pungens, H. fitchii, and H. luzulaefolia)], wild oats (Avena fatua), and annual lupine (Lupinus subvexus)] can be found in the isolated seasonal wetlands in the dry season.

Colma Creek and Major Canals

Colma Creek retains its original alignment but has been channalized and is now lined with concrete. The average width of the channel bottom is 14 feet measured toe-of-slope to toe-of-slope. The average width of the channel at ordinary high water is estimated to be approximately 22 feet.

Vegetation is limited to isolated sites where sediments have been deposited and within cracks along the concrete lined banks.

The other large canals in the project corridor vary in width from 20 feet to 47 feet. The vegetation in these canals also varies from the dense emergent growth along the South Lomita Canal to the unvegetated Cupid Row Canal.

Tributary Drainages

The intermittent tributaries vary in width from 2 to 18 feet. As with the larger canals, vegetation growth along these intermittent drainages ranges from little or no understory along the San Felipe Channel to a dense growth of willows on the small tributary off Colma Creek.

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APPENDIX A

ACOE VERIFICATION LETTER

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
211 MAIN STREET
SAN FRANCISCO, CALIFORNIA 94105-1905

REPLY TO
ATTENTION OF:

AUG 05 1994

Construction-Operations Division
Regulatory Branch

Subject: File Number 19669S91

Metropolitan Transportation Commission
c/o Mr. Ric Villasenor
OGDEN
221 Main Street, Suite 1400
San Francisco, California 94105

Dear Mr. Villasenor:

This refers to your letter of October 20, 1993 regarding Corps' verification of your preliminary delineation of waters of the United States on vacant property between Highway 101 and the Caltrain tracks west of the San Francisco International Airport (SFO) in the City of Millbrae, San Mateo County, California. This property has been identified as a possible location for a Bay Area Rapid Transit District extension from Colma to SFO.

Enclosed please find twenty-two maps (Entitled "Wetlands & Waters of U.S. on S.F. Airport Property West of Highway 101") showing the extent and location of Corps of Engineers jurisdiction on the above-mentioned property as of June 1994. Only map (Figure) 1 shows the Corps of Engineers insignia; the remainder include that insignia by reference.

We have based the jurisdictional delineation on the current condition of the site. A change in those conditions may change the extent of our jurisdiction. This jurisdictional delineation will expire in three years from the date of this letter. However, if there has been a change in circumstances which effects the extent of Corps jurisdiction, a revision may be done before that date.

All proposed discharges of dredged or fill material into waters of the United States must be authorized by the Corps of Engineers pursuant to Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344). Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands.

Any proposed work may be within our jurisdiction and a permit may be required. Application for Corps authorization should be made to this office using the application form in the enclosed pamphlet. To avoid delays it is essential that you enter the file number at the top of this letter into Item No. 1. The application must include plans showing the location, extent and character of the proposed activity, prepared in accordance with the requirements contained in this pamphlet. You should note, in planning your work, that upon receipt of a properly completed application and plans, it may be necessary to advertise the proposed work by issuing a public notice for a period of 30 days.

If an individual permit is required, it will be necessary for you to demonstrate to the Corps that your proposed fill is necessary because there are no practicable alternatives, as outlined in the U.S. Environmental Protection Agency's Section 404(b)(1) Guidelines. A copy is enclosed to aid you in preparation of this alternative analysis. Be aware that failure to satisfy the 404(b)(1) Guidelines will require denial of your application for a Corps permit.

If you have any questions, please call Rob Lawrence of our Regulatory Branch at telephone 415-744-3318 Ext. 234. Please address correspondence to the District Engineer, Attention: Regulatory Branch, and refer to the file number at the head of this letter.

Sincerely,

Max R. Blodgett for
Chief, Construction-Operations
Division

Enclosure

APPENDIX B

DATA FORMS: ROUTINE WETLAND DELINEATION

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**A1**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Xanthium strumarium*	**H**	**FAC+**	9. *Scirpus fluviatilis*	**H**	**OBL**
2. *Polygonum hydropiper*	**H**	**OBL**	10. *Alisma plantago-aquaticum*	**H**	**OBL**
3. *Eleocharis macrostachya*	**H**	**OBL**	11.		
4. *Atriplex patula*	**H**	**FACW**	12.		
5. *Salicornia pacifica*	**H**	**OBL**	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **All plant species are wetland indicators.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- √ Aerial Photographs
- ____ Other

____ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **0"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- √ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Algal mats and water-matted vegetation on the surface of soil. Aerial photo from March 1992 shows water ponding.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"		**10YR4/1**	**7.5YR3/4**		

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This plot is located within a large depression similar to that in the M plots. Water ponding was observed in February 1993.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93 & 4/4/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**A2**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Atriplex patula*	**H**	**FACW**	9. *Polygonum hydropiper*		
2. *Raphanus sativus*	**H**	**NI**	10. *Frankenia grandfolia*	**H**	**FACW**
3.			11. *Rumex crispus*	**H**	**FACW-**
4.			12. *Polypogon monspeliensis*	**H**	**FACW+**
5.			13. *Alisma plantago-aquaticum*	**H**	**OBL**
6.			14.	**H**	**OBL**
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks: **Although 50% of dominant plants are not hydrophytic indicators, it is believed to be because the *Raphanus* germinated after the pond dried. In spring, the atriplex is the dominant. Other subdom. suggest wetland vegetation.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- √ Aerial Photographs
- ____ Other

____ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Dried algal mat on soil surface. Aerial photo from April 1992 shows water ponding. Pit in April had wetted horizon about 12" below surface unlike A3 and A5 plots which had no wetted horizon.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
8"	**N/A**	**10YR3/2**	**7.5YR3/4**	**Few, fine to medium, prom**	**Variable structure (fill), sandy loam**
					Bay Mud W/1 12"

Hydric Soil Indicators:

______ Histosol
______ Histic Epipedon
______ Sulfidic Odor
______ Aqueous Moisture Regime
______ Reducing Conditions
√ Gleyed or Low-Chroma Colors
______ Concretions
______ High Organic Content in Surface Layer in Sandy Soils
______ Organic Streaking in Sandy Soils
______ Listed on Local Hydric Soils List
______ Listed on National Hydric Soils List
______ Other (Explain in Remarks)

Remarks: **12" to heavy clay or water restricting horizon**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**A3**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9. *Elymus triticoides*	**H**	**FAC+**
2. *Hordeum hystrix*	**H**	**FAC**	10. *Rumex crispus*	**H**	**FACW-**
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **This plot is very similar to plot A5.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- √ Aerial Photographs
- ____ Other

____ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **Lacks any hydrologic indicators and March 1992 photo does not show water ponding.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): **—**
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"	**N/A**	**10YR4/3**	**10YR4/3 7.5YR3/4**		**Light clay/ loam**
16"		**10YR3/1**	**None**		**Fill/heavy clay** **Impervious layer**

Hydric Soil Indicators:

______ Histosol
______ Histic Epipedon
______ Sulfidic Odor
______ Aqueous Moisture Regime
______ Reducing Conditions
__√__ Gleyed or Low-Chroma Colors
______ Concretions
______ High Organic Content in Surface Layer in Sandy Soils
______ Organic Streaking in Sandy Soils
______ Listed on Local Hydric Soils List
______ Listed on National Hydric Soils List
______ Other (Explain in Remarks)

Remarks: **Heavy clay/loam at 16".**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **No**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Vegetation indicators are not strong, no hydrologic indicators and soils are + indicator but fill in nature.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/27/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**A4**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Elymus triticoides*	**H**	**FAC+**	9. *Picris echioides*	**H**	**FAC**
2.			10. *Rumex crispus*	**H**	**FACW-**
3.			11. *Centaurea melitensis*	**H**	**NI**
4.			12. *Avena fatua*	**H**	**NI**
5.			13. *Lolium perenne*	**H**	**FAC**
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **This plot is similar to plot O8. It is at or very near the same elevation of plot A5.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ____ Inundated
  ____ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **No hydrologic indicators. Piezometer data at plot A5 at or near the same elevation, was consistently below 18" of the ground surface.**

SOILS

Map Unit Name
(Series and Phase): Urban land – orthents
Drainage Class: 0-2% slopes
Taxonomy (Subgroup): —
Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
12		10YR3/1			Fine clay loam

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aqueous Moisture Regime
- ☐ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes
Wetland Hydrology Present?	No
Hydric Soils Present?	Yes

Is this Sampling Point Within a Wetland? No

Remarks: Transitional vegetation w/ no hydrologic indicators and soils w/o mottles.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor**

Date: **4/4/94**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **Yes**
Is the site significantly disturbed (Atypical Situation)? **No**
Is the area a potential Problem Area? **No**

Community ID:
Transect ID:
Plot ID: **A5** (PIEZOMETER 8)

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	H	FAC	9. *Rumex crispus*	H	FACW-
2.			10. *Picris echioides*	H	FAC
3.			11. *Elymus triticoides*	H	FAC+
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Plots is dominated by *lolium* with scattered *rumex*.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
 ___ Stream, Lake, or Tide Gauge
 ___ Aerial Photographs
 ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **0"** (Inches)
Depth to Free Water in Pit: **23"** (Inches)
Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Limited piezometer data indicates that the ground water did not get closer than 23" to the surface. No indication of surface ponding.**

SOILS

Map Unit Name
(Series and Phase): Urban land – orthents

Drainage Class: 0-2% slopes

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? Yes

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"		10YR3/1	7.5YR3/4		Fine clay loam

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aqueous Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
√	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	
Wetland Hydrology Present?	No	
Hydric Soils Present?	Yes	Is this Sampling Point Within a Wetland? No

Remarks: **The fine clay loam soil will retain water for extended periods of time. Allow some of the marginal wetland species to become established. However, the ground water is below the rooting zone (18") and thus, the more typical wetland species do not become established. Therefore, this is not a wetland, due to a lack of hydrologic indicators**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor**

Date: **4/4/94**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **Yes**
Is the site significantly disturbed (Atypical Situation)? **No**
Is the area a potential Problem Area? **No**

Community ID: ______
Transect ID: ______
Plot ID: **A6**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Atriplex patula*	H	FACW	9. *Lolium perenne.*	H	FAC
2. *Rumex crispus*	H	FAC-	10. *Distichlis spicata*	H	FACW
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **This plot is located at the lowest point edge of a topographic gradient between plot A5 and this plot. The distinctive characteristic of this plot is the occurence of atriplex as a dominant and dried algal mats.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: ______ (Inches)

Depth to Free Water in Pit: ______ (Inches)

Depth to Saturated Soil: ______ (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ____ Inundated
  ____ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  √ Other (Explain in Remarks)

Remarks: **Algal mats on veg.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): —
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"		10YR3/1			Fine clay loam

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soils
	Aqueous Moisture Regime		Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
√	Gleyed or Low-Chroma Colors		Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes
Wetland Hydrology Present?	Yes
Hydric Soils Present?	Yes

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This was an obvious wetland this year and showed evidence of surface ponding with algal mats.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/4/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**A7**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9.		
2. *Rumex crispus*	**H**	**FACW-**	10.		
3. *Picris echioides*	**H**	**FAC**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **66%**

Remarks: **This plot is located at a slightly lower elevation than plot A5 (approximately 5-6"). The vegetation dominance shifts to include more *Rumex* and *Picris*.**

HYDROLOGY

___ Recorded Data (Describe in Remarks):
  ___ Stream, Lake, or Tide Gauge
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ___ Inundated
  ___ Saturated in Upper 12 Inches
  ___ Water Marks
  ___ Drift Lines
  ___ Sediment Deposits
  ___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ___ Oxidized Root Channels in Upper 12 Inches
  ___ Water-Stained Leaves
  ___ Local Soil Survey Data
  ___ FAC-Neutral Test
  ___ Other (Explain in Remarks)

Remarks: **No positive indicators. It is located near where the groundwater level would be within 17-18" of the surface.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"		10YR3/1			Fine clay loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	
Wetland Hydrology Present?	Yes	
Hydric Soils Present?	Yes	Is this Sampling Point Within a Wetland? Yes

Remarks: **This plot may be in a wetland during wet years but was at best at the margin this year.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93 &4/4/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**B1**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Epilobium ciliatum*	**H**	**FACW**	9. *Raphanus sativus*	**H**	**NI**
2. *Rumex crispus*	**H**	**FACW-**	10. *Polygonum hydropiper*	**H**	**OBL**
3. *Atriplex patula*	**H**	**FACW**	11. *Frankenia grandifolia*	**H**	**FACW+**
4.			12. *Vulpia bromoides*	**H**	**FACW**
5.			13. *Lotus corniculatus*	**H**	**FAC**
6.			14. *Rumex acetosella*	**H**	**FAC-**
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **This plot is located in the bottom of a large rectangular depression. The dominant plants are all wetland indicators.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
____ Stream, Lake, or Tide Gauge
√ Aerial Photographs
____ Other
____ No Recorded Data Available

Field Observations:

Depth of Surface Water: **4-6"** (Inches)
Depth to Free Water in Pit: **N/A** (Inches)
Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ____ Saturated in Upper 12 Inches
- √ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **Areal photo from March 1992 shows what appears to be water ponding in this area. Area was inundated on March 1, 1994. Revisit in April 1994. Pit soils were moist as compared to B2. Mottles were common throughout.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): **—**
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
16"		**10YR3/2**	**None**		**Sandy-loam**
2nd pit 14"		**10YR3/2**	**7.5YR3/4**	**Few, faint**	**Clay imperm. at 14"**
3rd pit 17"		**10YR4/2**	**7.5YR3/4**	**Common**	**Clay imperm at 7"**

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: **Two of three pits indicate mottles, w/ clay imperm. layer.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **Although this plot did not have good hydrologic indicators in late July, subsequent visits and aerial photos suggest water ponding in this area. Vegetation and soils verify wetland indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**B2**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Bromus mollis*	H	FACU-	9. *Rumex crispus*	H	FACW-
2. *Avena fatua*	H	NI	10.		
3. *Lolium perenne*	H	FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 33%

Remarks: **This plot is located on a slight (6"-1') rise or saddle between wetlands B and C.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- √ Aerial Photographs
- ____ Other

____ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **March 1992 photo shows plot is not** inundated, and there were no signs of surface inundation in July 1993 or April 1994.

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): **—**
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
16"		**10YR3/1**	**10YR3/2**	**Large, common**	

Hydric Soil Indicators:

____ Histosol	____ Concretions
____ Histic Epipedon	____ High Organic Content in Surface Layer in Sandy Soils
____ Sulfidic Odor	____ Organic Streaking in Sandy Soils
____ Aqueous Moisture Regime	____ Listed on Local Hydric Soils List
____ Reducing Conditions	____ Listed on National Hydric Soils List
√ Gleyed or Low-Chroma Colors	____ Other (Explain in Remarks)

Remarks: **Typical of most plots in this site, the soils show reduction, which probably represents conditions in wet years.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**		
Wetland Hydrology Present?	**No**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**No**

Remarks: **Lacks vegetation and hydrologic indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/4/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**B3**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Bromus mollis*	**H**	**NI**	9.		
2. *Lolium perenne*	**H**	**FAC**	10.		
3. *Rumex acetosella*	**H**	**FAC-**	11.		
4. *Holcus lanatus*	**H**	**FAC**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks: **This plot is located ~6" above plot B1. There is a distinct vegetative shift between the two plots. The FACW species drop out in this plot and are replaced by FAC and upland grasses.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No surface or subsurface indicators. Soils dry, no moisture as compared to plot B1 where soils were still moist.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"		**2.5 YR4/1**	--------		**Loam**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Soils lack mottles, dark but all soils on site are dark. No hydrologic indicators. Vegetation indicators are marginal. On wet years, this area may support more annual wetland species.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor**
Date: **4/15/94**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:
Is the area a potential Problem Area?	**No**	Plot ID: **B4**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Rumex crispus*	**H**	**FACW-**	9. *Atriplex patula*	**H**	**FACW**
2. *Lolium perenne*	**H**	**FAC**	10.		
3. *Holcus lanatus*	**H**	**FAC**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Vegetation grades from lowest areas dominated by Polygonum hydropiper and Epilobium ciliatum to Atriplex patula then to Holcus lanatus and Rumex crispus (Plot B3) to Lolium perenne (Plot B2). This plot is located at edge of Rumex crispus & Holcus lanatus with Lolium perenne.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
  ___ Stream, Lake, or Tide Gauge
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **1-2"** (Inches)
Depth to Free Water in Pit: **>18"** (Inches)
Depth to Saturated Soil: **18"** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- √ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Water marks on standing vegetation. (1-2" Deep)**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"		**10 YR 3/1**	**NA**		**Clay loam**
18"		**10 YR 3/1**	**NA**		**Clay loam**

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aqueous Moisture Regime
- Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This plot is believed to be on the edge of the inundation area and like plot B3 would have more positive wetland Indicators in wet years.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**B5**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Atriplex patula*	**H**	**FACW**	9. *Rumex crispus*	**H**	**FACW-**
2. *Picris echioides*	**H**	**FAC**	10. *Holcus lanatus*	**H**	**FAC**
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC--). **100%**

Remarks: **Similar to plot B1. All dominant & subdominant plants are wetland indicators. The Atriplex shifts into a dominant position from plot B4.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
 ___ Stream, Lake, or Tide Gauge
 ___ Aerial Photographs
 ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **2-3"** (Inches)

Depth to Free Water in Pit: **>18"** (Inches)

Depth to Saturated Soil: **12"** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
 ___ Inundated
 ___ Saturated in Upper 12 Inches
 √ Water Marks
 ___ Drift Lines
 ___ Sediment Deposits
 ___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
 ___ Oxidized Root Channels in Upper 12 Inches
 ___ Water-Stained Leaves
 ___ Local Soil Survey Data
 ___ FAC-Neutral Test
 ___ Other (Explain in Remarks)

Remarks: **Water stains on standing vegetation (2-3"). Saturated soil at 12" below ground surface suggesting wetland.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
6-12"		**10YR 3/1**	**7.5 YR 4/4**	**Common/Sharp**	**Loam-sand**
12-18"		**10 YR 4/1**	**NA**		**Clay loam**

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: **Dark soils with common mottles in upper 12".**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**
Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **This plot is very similar to plot B1.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: BART SFO EXTENSION
Application/Owner: BART/S.F. International Airport
Investigator: Ric Villaseñor & Larry Stromberg, Ph.D.

Date: 4/15/94
County: San Mateo
State: California

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No
Is the area a potential Problem Area? No

Community ID: ______
Transect ID: ______
Plot ID: C1

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	H	FAC	9. *Frankenia grandifolia*	H	FACW+
2. *Hordeum brachyantherum*	H	FACW	10. *Agrostis stolonifera*	H	FACW
3.			11. *Juncus mexicanus*	H	FACW
4.			12. *Rumex crispus*	H	FACW-
5.			13. *Lotus corniculatus*	H	FAC
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 100%

Remarks: **All dominants and majority of subdominants are wetland indicators.**

HYDROLOGY

___ Recorded Data (describe in remarks):
  ___ Stream, Lake, or Tide Guage
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
  ___ Inundated
  ___ Saturated in Upper 12 Inches
  ___ Water Marks
  ___ Drift Lines
  ___ Sediment Deposits
  ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
  ___ Oxidized Root Channels in Upper 12 Inches
  ___ Water-Stained Leaves
  ___ Local Soil Survey Data
  ___ FAC-Neutral Test
  √ Other (explain in remarks)

Remarks: **Water-matted vegetation. Although surface ponding was not observed in 1994, there was evidence of ponding in 1993, a wet year.**

SOILS

Map Unit Name (Series and Phase): **Urban land - orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **–**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
16"		**10 YR 3/1**	**10 YR 3/2**	**Large, common**	
			7.5 YR 3/4	**Few, fine, prom**	

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
√ Gleyed or Low-Chroma Colors

____ Concretions
____ High Organic content in Surface Layer in Study Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (explain in remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point within a Wetland? **Yes**

Remarks: **All three parameters are indicated at this plot. This wetland has a culvert outlet at its northern end which defines the inundation levels.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	7/20/93
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor & Larry Stromberg, Ph.D.	State:	California
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	C2

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Polygonium hydropiper*	H	OBL	9. *Polypogon monspeliensis*	H	FACW+
2. *Agrostis stolonifera*	H	FACW	10. *Rumex crispus*	H	FACW-
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: **Dominant plant species indicate wetlands.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Matted algae and water-matted vegetation.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
16"		10YR3/1	7.5YR3/4	Few, fine	Clay-loam
			5YR3/4	Few, fine	

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aqueous Moisture Regime
- Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **All three parameters are indicated at this plot. This wetland has culvert outlet at the northend and a drainage ditch inlet at the south end. The outlet determines the level of inundation.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	8/31/93
Application/Owner:	**BART/S.F. International Airport**	County:	San Mateo
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	California

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	C3

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Avena fatua*	H	NI	9. *Bromus mollis*	H	FACU-
2. *Brassica nigra*	H	NI	10.		
3. *Centaurea melitensis*	H	NI	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: **This plot is located above the inundation area of the rectangular wetland noted in plots C1 & C2. This is on a steep bank and the shift in vegetation is sharp and evident.**

HYDROLOGY

___ Recorded Data (Describe in Remarks):
   ___ Stream, Lake, or Tide Gauge
   ___ Aerial Photographs
   ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
   ___ Inundated
   ___ Saturated in Upper 12 Inches
   ___ Water Marks
   ___ Drift Lines
   ___ Sediment Deposits
   ___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
   ___ Oxidized Root Channels in Upper 12 Inches
   ___ Water-Stained Leaves
   ___ Local Soil Survey Data
   ___ FAC-Neutral Test
   ___ Other (Explain in Remarks)

Remarks: **No hydrologic indicators. Plot is located above the invert of the outlet culvert.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"		**10YR4/1**			**Sandy soils**

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aqueous Moisture Regime
- ___ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **No**

Wetland Hydrology Present? **No**

Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **This plot lacks vegetation indicators, and is located above the invert of the outlet culvert.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/31/93 &4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**C4**

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Polypogon monspeliensis*	**H**	**FACW+**	9.	*Atriplex patula*	**H**	**FACW**
2.	*Xanthium strumarium*	**H**	**FAC+**	10.	*Rumex crispus*	**H**	**FACW-**
3.	*Eleocharis macrostachya*	**H**	**OBL**	11.	*Picris echioides*	**H**	**FAC**
4.	*Agrostis stolonifera*	**H**	**FACW**	12.	*Lolium perenne*	**H**	**FAC**
5.				13.	*Lotus corniculatus*	**H**	**FAC**
6.				14.	*Lilaea scilloides*	**H**	**OBL**
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **This wetland is a depression that is surrounded by steep earthen berms. The vegetation shift to uplands is dramatic and easily defined.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Water-matted vegetation and algal mats.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
12"		**10 YR 3/1**	**7.5 YR 4/4**	**Common**	**Clay loam**
18"		**1o YR 4/1**	**7.5 YR 4/4**	**Common**	**Clay loam**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Soils dark with commom mottles within 12" of surface.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Strong vegetation and soils indictors with positive hydrology. Hydrology indicators were weak but is believed to be due to the time of year the data was taken.**

DATA FORM
ROUTINE WETLAND DETERMINATION
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Project/Site:	BART SFO EXTENSION	Date:	4/15/94
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor	State:	California
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	C5

Located between wetlands C & E on slight 1-2' elevation above these wetlands

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Vulpia*	H		9. *Plantago coronopus*	H	FAC
2. *Hordeum mystrix*	H	NI	10. *Picrus echioides*	H	FAC
3. *Lolium perenne*	H	FAC	11. *Medicago polymorpha*	H	NI
4. *Hordium brachyanthum*	H	FACW	12.		
5. *Eleocharis macrostachya*	H	OBL	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): ______

Remarks: There are barren spots w/ white soils & Cotula coronopifolia in the area.

HYDROLOGY

___ Recorded Data (describe in remarks):

___ Stream, Lake, or Tide Guage

___ Aerial Photographs

___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:

___ Inundated

___ Saturated in Upper 12 Inches

___ Water Marks

___ Drift Lines

___ Sediment Deposits

___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

___ Oxidized Root Channels in Upper 12 Inches

___ Water-Stained Leaves

___ Local Soil Survey Data

___ FAC-Neutral Test

___ Other (explain in remarks)

Remarks: No surface indicators, or subsurface indicators. This plot is located on a saddle between plots C4 & E11.

SOILS

Map Unit Name (Series and Phase): **Urban land - orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **–**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-14"		**10YR 3/1**	**N/A**		**Loam**

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aqueous Moisture Regime
- _____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- _____ Concretions
- _____ High Organic content in Surface Layer in Study Soils
- _____ Organic Streaking in Sandy Soils
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (explain in remarks)

Remarks: **Dark soil but no mottles.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?

Wetland Hydrology Present?

Hydric Soils Present?

Is this Sampling Point within a Wetland?

Remarks:

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Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**E1**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9. *Polygonum hydropiper*	**H**	**OBL**
2. *Eleocharis macrostachya*	**H**	**OBL**	10. *Cotula coronopifolia*	**H**	**FACW+**
3. *Agrostis stolonifera*	**H**	**FACW**	11. *Frankenia grandifolia*	**H**	**FACW+**
4.			12. *Juncus mexicanus*	**H**	**FACW**
5.			13. *Atriplex patula*	**H**	**FACW**
6.			14. *Rumex crispus*	**H**	**FACW-**
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **All dominant & subdominant plants are wetland indicators.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- √ Water Marks
- ___ Drift Lines
- √ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Algal mats on ground surface.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
16"		**10YR3/1**	**10YR3/4**	**Common**	

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
√ Gleyed or Low-Chroma Colors

____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks: **Dark soils with common mottles.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **All three parameters are indicated at this site. There is an outlet culvert near the center of this seasonal wetland. The invert of this culvert defines the inundation elevation of the wetland.**

DATA FORM
ROUTINE WETLAND DETERMINATION
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Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**E2**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Holcus lanatus*	H	FAC	9. *Lolium perenne*	H	FAC
2. *Agrostis stolonifera*	H	FACW	10. *Juncus mexicanus*	H	FACW
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **All dominant and subdominant plants are wetland indicators.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
 ___ Stream, Lake, or Tide Gauge
 ___ Aerial Photographs
 ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
 ___ Inundated
 ___ Saturated in Upper 12 Inches
 ___ Water Marks
 √ Drift Lines
 ___ Sediment Deposits
 ___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
 ___ Oxidized Root Channels in Upper 12 Inches
 ___ Water-Stained Leaves
 ___ Local Soil Survey Data
 ___ FAC-Neutral Test
 √ Other (Explain in Remarks)

Remarks: **Water-matted vegetation.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): —
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
16"		**10YR4/1.5**	**5YR3/4**	**Few, fine**	**Clay loam**
			7.5YR2/0	**Associated with buried organic matter**	

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
√ Gleyed or Low-Chroma Colors
____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks: **Colormetric evidence**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes
Wetland Hydrology Present?	Yes
Hydric Soils Present?	Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: **Vegetation is dominated by wetland species. Limited signs of surface hydrology; however, soils show signs of saturation within 16" of surface. This plot is located near the outlet to this wetland which defines the inundation elevation of this wetland.**

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Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**E3**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Avena barbata*	**H**	**NI**	9. *Lactuca serriola*	**H**	**FAC**
2. *Atriplex californica*	**H**	**FAC**	10. *Centaurea melitensis*	**H**	**NI**
3.			11. *Sonchus oleraceus*	**H**	**NI**
4.			12. *Bromus diandrus*	**H**	**NI**
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks: **This plot is located on a steep slope area above plot E11. The sub-dominant species are primarily upland species.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No hydrologic indicators.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"		**10YR5/1**	**2.5YR7/6**	**Rare, prom**	

Hydric Soil Indicators:

- ______ Histosol
- ______ Histic Epipedon
- ______ Sulfidic Odor
- ______ Aqueous Moisture Regime
- ______ Reducing Conditions
- ______ Gleyed or Low-Chroma Colors
- ______ Concretions
- ______ High Organic Content in Surface Layer in Sandy Soils
- ______ Organic Streaking in Sandy Soils
- ______ Listed on Local Hydric Soils List
- ______ Listed on National Hydric Soils List
- ______ Other (Explain in Remarks)

Remarks: **Colormetric evidence**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**

Wetland Hydrology Present? **No**

Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Marginal vegetation w/ no hydrology indicators.**

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ROUTINE WETLAND DETERMINATION
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Project/Site:	**BART SFO EXTENSION**	Date:	8/31/93
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	E4

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Rumex crispus*	**H**	**FACW-**	9. *Cirsium* species	**H**	**NI**
2. *Conium maculatum*	**H**	**NI**	10. *Holcus lanatus*	**H**	**FAC**
3. *Baccharis sarothroides*	**S**	**NI**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **33%**

Remarks: **This plot is located on a small upland peninsula out into a larger wetland. The adjacent plots (E9 & E7) are dominated by a monotypic stand of Holcus lanatus at slighty lower elevation (6-10").**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ____ Inundated
  ____ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **No hydrologic indicators.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
16"		**7.5 YR 4/1**	**10 YR 4/4**	**Uncommon, prom**	

Hydric Soil Indicators:

☐ Histosol
☐ Histic Epipedon
☐ Sulfidic Odor
☐ Aqueous Moisture Regime
☐ Reducing Conditions
☑ Gleyed or Low-Chroma Colors

☐ Concretions
☐ High Organic Content in Surface Layer in Sandy Soils
☐ Organic Streaking in Sandy Soils
☐ Listed on Local Hydric Soils List
☐ Listed on National Hydric Soils List
☐ Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **No**
Wetland Hydrology Present? **No**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Although the soil has a low-chroma w/ mottles, the vegetation is upland and there are no hydrologic indicators on this slightly raised island in the larger depression.**

DATA FORM
ROUTINE WETLAND DETERMINATION
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Project/Site:	**BART SFO EXTENSION**	Date:	**8/31/93 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**E5**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Atriplex patula*	**H**	**FACW**	9. *Lolium perenne*	**H**	**FAC**
2. *Cotula coronopifolia*	**H**	**FACW+**	10. *Rumex crispus*	**H**	**FAC-**
3. *Polypogon monspeliensis*	**H**	**FACW+**	11. *Agrostis stolonifera*	**H**	**FACW**
4. *Eleocharis macrostachya*	**H**	**OBL**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **All dominant plants are FACW or OBL wetland indicators.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
    ___ Stream, Lake, or Tide Gauge
    ___ Aerial Photographs
    ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **6-10"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Water-matted vegetation. Algal mats. Surface water 6-10" deep was ponded at the east end of wetland and in the channel of plot E6.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

_____ Histosol

_____ Histic Epipedon

_____ Sulfidic Odor

_____ Aqueous Moisture Regime

_____ Reducing Conditions

_____ Gleyed or Low-Chroma Colors

_____ Concretions

_____ High Organic Content in Surface Layer in Sandy Soils

_____ Organic Streaking in Sandy Soils

_____ Listed on Local Hydric Soils List

_____ Listed on National Hydric Soils List

_____ Other (Explain in Remarks)

Remarks: **Did not sample because dominant plant species are FACW and OBL and an obvious wetland.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**NA**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **Strong vegetation and hydrologic indicators in an obvious depression.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/31/93 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**E6**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Atriplex patula*	H	FACW	9. *Polygonum hydropiper*	H	OBL
2. *Eleocharis macrostachya*	H	OBL	10. *Rumex crispus*	H	FACW-
3. *Polypogon monspeliensis*	H	FACW+	11. *Lolium perenne*	H	FAC
4. *Agrostis stolonifera*	H	FACW+	12. *Picris echioides*	H	FAC
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **This plot is similar to plot E5 dominated by FACW and OBL species. The wetland vegetation is surrounded by upland vegetation on steep slopes. There is a sharp and obvious shift between the wetland and upand vegetation.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **1-2”** (Inches)

Depth to Free Water in Pit: ___ (Inches)

Depth to Saturated Soil: ___ (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Water was in the channel from a culvert under the freeway.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Did not sample due to dominance of OBL & FACW plant species.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	
Wetland Hydrology Present?	**Yes**	
Hydric Soils Present?	**NA**	Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Strong vegetation indicators and hydrologic indicators in an obvious channel fed by a culvert from beneath the freeway to the east.**

/94DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/31/93 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**E7**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Holcus lanatus*	**H**	**FAC**	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **A single species dominates forming a monotype stand.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- √ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Water-matted vegetation.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"		**10YR4/1**	**5YR3/4**	**Associated w/ buried organic matter**	
				Few, fine	**Clay loam**

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
√ Gleyed or Low-Chroma Colors

____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks: **Dark and mottled soil.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Although vegetation is marginal indicator the positive hydrologic and soil indicators would define a wetland. Plot is located very near the oulet culvert to this wetland.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/31/93 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**E8**

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Eleocharis macrostachya*	**H**	**OBL**	9.	*Polygonum hydropiper*	**H**	**OBL**
2.	*Agrostis stolonifera*	**H**	**FACW**	10.	*Atriplex patula*	**H**	**FACW**
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Strong wetland plant indicators in this old slough that has been converted from saltwater to freshwater.**

HYDROLOGY

√ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- √ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: **4-6"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
- Primary Indicators:
  - √ Inundated
  - ___ Saturated in Upper 12 Inches
  - ___ Water Marks
  - ___ Drift Lines
  - ___ Sediment Deposits
  - ___ Drainage Patterns in Wetlands
- Secondary Indicators (2 or more required):
  - ___ Oxidized Root Channels in Upper 12 Inches
  - ___ Water-Stained Leaves
  - ___ Local Soil Survey Data
  - ___ FAC-Neutral Test
  - √ Other (Explain in Remarks)

Remarks: **Algal mats, remnant slough. On 4/15/94, there was surface water along the entire length. Estimated depth is 4-6" on 4/15/94.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents** Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—** Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Sample not taken. Dominant indicator plant species are OBL & FACW which indicate wetland and soil sample not required**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**NA**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **This plot is within one of the remnant bay sloughs that has not been significantly altered with all the filling that has occurred on this site.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor & Larry Stromberg, Ph.D.**

Date: **8/31/93 & 4/15/94**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **Yes**
Is the site significantly disturbed (Atypical Situation)? **No**
Is the area a potential Problem Area? **No**

Community ID: ______
Transect ID: ______
Plot ID: **E9**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Holcus lanatus*	H	FAC	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **This plot is located within the larger depression in an area that supports a monotypic stand of a FAC plant species.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ____ Inundated
  ____ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **There was no surface hydrologic evidence of ponding in either 1993 or 1994.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"		**10YR4/1**	**5YR3/4**	**Associated with buried organic matter**	
				Few, fine	**Clay loam**

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aqueous Moisture Regime
- Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**

Wetland Hydrology Present? **No**

Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This plot is very similar to plot E7. The main difference is that this plot lacks any surface hydrologic indicators. It is considered a wetland in any event due to the fact there is no obvious elevational differences between this plot and plot 7, and that subsurface hydorlogic indicators may be expected to be more obvious during the wet season.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/31/93 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**E10**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Typha latifolia*	**H**	**OBL**	9. *Rumex crispus*	**H**	**FACW-**
2. *Eleocharis macrostachya*	**H**	**OBL**	10. *Lotus corniculatus*	**H**	**FAC**
3. *Agrostis stolonifera*	**H**	**FACW**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **This portion of the larger wetland to the west is surrounded by steep slopes and thus the delineation between wetland and upland are sharp and obvious.**

HYDROLOGY

√ Recorded Data (Describe In Remarks):
- Stream, Lake, or Tide Gauge
- √ Aerial Photographs
- Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: **6/2”** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- Oxidized Root Channels in Upper 12 Inches
- Water-Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks: **Water-matted vegetation, plot w/i historic bay slough on the site as determined by old aerial photographs. The deepest portions of the wetland with the cattails had 6-12” of water on 4/15/94.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): **—**
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Not required due to vegetation dominance by OBL & FACW species.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **NA**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This plot is located in a wetland that is a remnant of an old slough bayland.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/31/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**E11**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Polypogon monspeliensis*	H	FACW+	9. *Cotula coronopifolia*	H	FACW+
2. *Eleocharis macrostachya*	H	OBL	10. *Polygonum hydropiper*	H	OBL
3. *Scirpus robustus*	H	OBL	11. *Agrostis stolonifera*	H	FACW
4.			12. *Atriplex patula*	H	FACW
5.			13. *Agrostis stolonifera*	H	FACW
6.			14. *Lolium perenne*	H	FAC
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **All dominant and subdominant plant species are wetland indicators. This plot is located in the bottom of linear depression surrounded by steep slopes on three sides, and an elevated saddle (plot C5) to the north. The vegetation shift between wetland & upland is obvious and easily delineated (plot E3).**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Algal mats carpet ground surface.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"		**10YR3/1**	**10YR4/2**	**Common**	**Clay**
			10YR5/3		

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aqueous Moisture Regime
Reducing Conditions
√ Gleyed or Low-Chroma Colors
Concretions
High Organic Content in Surface Layer in Sandy Soils
Organic Streaking in Sandy Soils
Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **All three parameters are positive at this plot.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**E12**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9. *Raphanus sativus*	**H**	**NI**
2.			10. *Rumex crispus*	**H**	**FACW-**
3.			11. *Avena fatua*	**H**	**NI**
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Although the dominant plant species is FAC, the subdominants are not wetland indicators.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No surface indicators located ~12"-16" above elevation of plot EI.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-14"		**7.5 YR 4/2**	**10 YR 4/4**	**Common**	**Loam-Rocky-Clay**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Non-uniform, clay & rock inclusions. Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **No**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **This plot is located 1'-1.5' above plot E1 on a gradual slope. The vegetation difference between this plot and plot E1 is that all the OBL and FACW species drop out although the plot is dominated by a FAC species. There are no hydrologic indicators, but the soils are hydric, but so are the soils of other upland sites in this area.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**E13**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Bromus mollis*	**H**	**NI**	9. *Raphanus satinus*	**H**	**NI**
2. *Rumex acetosella*	**H**	**FAC-**	10. *Rumex crispus*	**H**	**FACW-**
3.			11. *Cirsium vulgare*	**H**	**NI**
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **0%**

Remarks: **This plot is located about a foot above plot E9. There is no Holcus lanatus in this area.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No surface indicators.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): **—**
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-14"		**7.5 YR 4/2**	**10YR 4/4**	**Common**	**Loam**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **No**
Wetland Hydrology Present? **No**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **This plot is located on a small bench above (6") plot E9. This plot is dominated by upland species withou Holcus lanatus (FAC). No hydrologic indicators. It appears to be located above the invert elevation of the outlet culvert and thus rarely if ever inundated.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**E14**

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Eleocharis macrostachya*	H	OBL	9.	*Lactuca serriola*	H	FAC
2.	*Lotus corniculatus*	H	FAC	10.	*Vulpia bromoides*	H	FACW
3.	*Lolium perenne*	H	FAC	11.	*Bromus diandrus*	H	NI
4.	*Bromus mollis*	H	NI	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **75%**

Remarks: **This plot is located on a small bench that is 10-12" above the pooled water of plots E5 & E6, and is surrounded by steep banks and thus the delineation between upland and wetland is obvious.**

HYDROLOGY

Recorded Data (Describe In Remarks):
- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **15"** (Inches)

Depth to Saturated Soil: **6"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- Inundated
- √ Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- Oxidized Root Channels in Upper 12 Inches
- Water-Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **The ground water was within 15" of the surface on 4/15/94.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6"		**10 YR 3/1**	**NA**		**Loam**
6-12"		**10 YR 4/1**	**7.5 YR 4/4**	**Common**	**Clay (bay mud)**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This plot is located on a bench 4-6" above plots E5 & E6 which were inundated. Ground water was within 18" of surface and vegetation is dominated by one OBL.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**F1** (PIEZOMETER 9)

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Avena barbata*	H	NI	9. *Lactuca serriola*	H	FAC-
2. *Lolium perenne*	H	FAC	10. *Rumex acetosella*	H	FAC-
3. *Raphanus sativus*	H	NI	11. *Rumex crispus*	H	FACW-
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **33%**

Remarks: **Plot is dominated by non-wetland indicators.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
_√_ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **17-24"** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ____ Inundated
  ____ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **Piezometer #9 was placed at this point. Groundwater data collected indicated that this was near or at the wetland upland boundary.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"	**N/A**	**10YR3/2**	**None**	**N/A**	**Clay/Loam**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
__√__ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Lacks suitable vegetation indicators and marginal hydrologic indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**F2**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Bromus mollis*	**H**	**FACU-**	9. *Rumex acetosella*	**H**	**FAC-**
2. *Holcus lanatus*	**H**	**FAC**	10. *Avena fatua*	**H**	**NI**
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks: **Although predominant plant species are upland species, the Holcus lanatus forms a nearly monotypic stand similar to plot E9, E7, and E2.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
    ____ Stream, Lake, or Tide Gauge
    ____ Aerial Photographs
    ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water:	N/A	(Inches)
Depth to Free Water in Pit:	N/A	(Inches)
Depth to Saturated Soil:	N/A	(Inches)

Wetland Hydrology Indicators:
Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **Piezometer data would suggest this plot is within or very near the wetland boundary. Since it is at a slightly lower elevation, it is assumed to be a part of the wetland. The inundation elevation of this wetland is definded by the invert of an outlet culvert at the southern end of the depression.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"	**N/A**	**10YR3/1-3/2**	**2.5YR3/6**	**Common**	

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
√ Gleyed or Low-Chroma Colors

____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Weak vegetation indicators, but positive hydrologic and soils indicators. The mapped wetland area north of plot F2 is transitional.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**F3**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Polygonum hydropiper*	H	OBL	9. *Agrostis stolonifera*	H	FACW
2. *Eleocharis macrostachya*	H	OBL	10.		
3. *Juncus mexicanus*	H	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **All plant species are wetland indicators.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
  ___ Stream, Lake, or Tide Gauge
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **2-4"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  √ Inundated
  ___ Saturated in Upper 12 Inches
  ___ Water Marks
  ___ Drift Lines
  ___ Sediment Deposits
  ___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ___ Oxidized Root Channels in Upper 12 Inches
  ___ Water-Stained Leaves
  ___ Local Soil Survey Data
  ___ FAC-Neutral Test
  √ Other (Explain in Remarks)

Remarks: **Algae mats on ground surface, appears to have ponded water in March 1992 photo. Ponding of water observed in April 1994.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**	Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): **—**	Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"	**N/A**	**2.5 YR 5/2**	**10 YR 5/6**	**Few**	

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
__√__ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	
Wetland Hydrology Present?	**Yes**	
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland? **Yes**

Remarks: **All three parameters indicate wetland at this site. Soils are not real strong but vegetation and hydrology are strong.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**G1**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Typha latifolia*	**H**	**OBL**	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Cattails form a monotypic stand. The wetland boundary is sharply defined by the cattails and/or bare mud flats above which are grasses of Avena and Bromus sp.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **1"-36"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Algae mats and water-matted vegetation. Water was ponded in April 1994 and estimated to be a maximum of 3 feet deep.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): —
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"		**10YR3/2**	**5YR5/8**	**Common**	

Hydric Soil Indicators:

- ____ Histosol
- √ Histic Epipedon
- √ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks: **Semi-closed depression, soils have high organic content.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Site is a semi-closed depression along an earthen ditch. There were three debris dams built by people to cross the drainage channel that backed up water into this wetland. Further downstream is an area used by cyclists where the bottom elevation of the channel has been raised to the point where no surface water was flowing past this area and the water was dammed completely.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**H1**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Typha latifolia*	H	OBL	9.		
2. *Raphanus sativus*	H	HI	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks: **This area pond water due in part to a rise in elevation on the channel just south of this area. Surrounding uplands are easily defined by mud flats and blackberry bushes.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **2-3"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- √ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Water-matted and sediment-covered mulch; algal mats. Deep water ponding on 4/15.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
	Heavy O.M.				
0-16"	**Content**	**10YR4/2**	**7.5YR3/4**	**Few, Fine**	**Sandy Loam**
@16"		**10YR3/2**	**7.5YR3/4**	**Few, Fine**	**H. Clay Loam**

Hydric Soil Indicators:

- Histosol
- √ Histic Epipedon
- Sulfidic Odor
- Aqueous Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks: **Heavy surface organic matter (O.M.).**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Semi-closed depression w/ invert below inverts of incoming and outflowing ditches (above adjacent ditch). Ditch width approximately 10' at site. Narrows to ϖ=5-6' downgradient.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**I1**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Bromus rigidus*	**H**	**NI**	9. *Polygonum aviculare*	**H**	**FAC**
2. *Avena fatua*	**H**	**NI**	10. *Bromus mollis*	**H**	**FACU**
3.			11. *Rumex acetosella*	**H**	**FAC-**
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **0%**

Remarks: **Vegetation not hydrophytic.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)
Depth to Free Water in Pit: **N/A** (Inches)
Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ____ Inundated
  ____ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **No hydrologic indicators.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8		**10YR3/2**	**7.5YR3/4**	**Few, Fine**	**Fill**
8-16		**7.5YR2/10**	**10YR6/8**	**Few, Fine**	**Fill**

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aqueous Moisture Regime
- ☐ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: **Colormetric evidence, but not functionally a hydric soil (multiple fill sources partly explain soil colors).**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **No**
Wetland Hydrology Present? **No**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks:Plot lacks suitable vegetation and hydrology indicators. Soils indicate hydric conditons, but they imported fill and their color may be due in part to their origin.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**I2**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9. *Raphanus sativus*	**H**	**NI**
2. *Holcus lanatus*	**H**	**FAC**	10. *Rumex crispus*	**H**	**FACW-**
3. *Bromus diamdrus*	**H**	**NI**	11. *Lotus corniculatus*	**H**	**FAC**
4.			12. *Avena fatua*	**H**	**NI**
5.			13. *Hordeum hystrix*	**H**	**NI**
6.			14. *Atriplex patula*	**H**	**FACW**
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **66%**

Remarks: **Hydrophytic veg present .**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **>20"** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No surface hydrologic indicators. However nearby plot (I3) had groundwater level at 7". This plot is apporximately 12" above that plot and thus the gourndwater level is expected to be at 19" on April 20,1994. However, no groundwater was found at 20".**

SOILS

Map Unit Name (Series and Phase): Urban land – orthents

Drainage Class: 0-2% slopes

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8"		10YR4/2	10YR5/8	Few, fine, prom	Fine sandy loam
			7.5YR3/4		
8-16"		Glayed 5G 4/1			Bay mud

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aqueous Moisture Regime
- Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks: **Colorimetric evidence**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? No

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? No

Remarks: **Vegetation is marginal, no hydrologic indicators, soils are positive but we found + soils in other upland sites. Plot has deep tire ruts where more wetland plant species occur. This plot is slightly (1 foot) elevated over plot I3.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**I3**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Polygonum hydropiper*	**H**	**OBL**	9. *Rumex crispus*	**H**	**FACW-**
2. *Lolium perenne*	**H**	**FAC**	10. *Raphanus sativus*	**H**	**NI**
3.			11. *Atriplex patula*	**H**	**FACW**
4.			12. *Juncus mexicanus*	**H**	**FACW**
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Polygonium dominates in the bottom of tire ruts. Lolium dominates in areas outside of tire ruts. Nearly all subdominates are wetland indicators.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **7"** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- √ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No evidence of surface ponding or flowing H_2O. Soil saturated form 0-7" where groundwater occurs on April 20, 1994.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6"		**10 YR 3/2**	**7.5 YR 3/4**	**Few, Prom**	**Sandy loam to clay loam (fill with variable text.)**
6-14"		**Glayed 5G 4/1**			**Bay muds**

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aqueous Moisture Regime
Reducing Conditions
√ Gleyed or Low-Chroma Colors

Concretions
High Organic Content in Surface Layer in Sandy Soils
Organic Streaking in Sandy Soils
Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (Explain in Remarks)

Remarks: **Surface soils (above 6") very porous w/ abundant fine root pores high in organic matter; clay content increases at 6".**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Vegetation indicators are strong in small patches. Hydrology indicators do exist. Upper soils are highly variable but with low chroma colors and a few mottles. Soil below 6-12" is bay mud.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/31/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**I4**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Raphanus sativus*	H	NI	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **0%**

Remarks:

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No hydrologic indicators.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
16		**10YR3/3**	**No mottles**		

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aqueous Moisture Regime
- ☐ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: **Low-chroma but no mottles.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**		
Wetland Hydrology Present?	**No**		
Hydric Soils Present?	**No**	Is this Sampling Point Within a Wetland?	**No**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/31/93 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**I5**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9. *Rumex crispus*	**H**	**FAC-**
2. *Rumex acetosella*	**H**	**FAC-**	10. *Agrostis stolonifera*	**H**	**FACW**
3. *Holcus lanatus*	**H**	**FAC**	11. *Cyperus eragrostis*	**H**	**FACW**
4. *Bromus mollis*	**H**	**NI**	12. *Picris Ericoides*	**H**	**FAC**
5.			13. *Lotus corniculatus*	**H**	**FAC**
6.			14. *Heteromeles arbutifolia*	**S**	**NI**
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks: **Wetland vegetation indicators are marginal.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **>21"** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ____ Inundated
  ____ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **No surface hydrologic indicators, and dug pit to 21" and no groundwater. Soil at 20" was moist but not saturated.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"		**10 YR 4/2**	**10 YR 5/8**	**Common, Prom**	**Find, sandy loam (fill) with clay inclusions**
18-22"		**10 YR 4/2**	**10 YR 5/8**		**clay loam**

Hydric Soil Indicators:

☐	Histosol	☐	Concretions
☐	Histic Epipedon	☐	High Organic Content in Surface Layer in Sandy Soils
☐	Sulfidic Odor	☐	Organic Streaking in Sandy Soils
☐	Aqueous Moisture Regime	☐	Listed on Local Hydric Soils List
☐	Reducing Conditions	☐	Listed on National Hydric Soils List
√	Gleyed or Low-Chroma Colors	☐	Other (Explain in Remarks)

Remarks: **Reduced rooting zone. Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**No**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**No**

Remarks: **Marginal vegetation w/ upland shrub species. No hydrologic indicators with positive soils. However, some upland sites have positive soils elsewhere possibly due to origin of fill soils.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor & Larry Stromberg, Ph.D.**

Date: **7/20/93**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **Yes**
Is the site significantly disturbed (Atypical Situation)? **No**
Is the area a potential Problem Area? **No**

Community ID: ___
Transect ID: ___
Plot ID: **J1**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Polygonum hydropiper*	H	OBL	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **No subdominants. The dominant is an OBL.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
 ___ Stream, Lake, or Tide Gauge
 ___ Aerial Photographs
 ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
 ___ Inundated
 ___ Saturated in Upper 12 Inches
 ___ Water Marks
 ___ Drift Lines
 ___ Sediment Deposits
 ___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
 ___ Oxidized Root Channels in Upper 12 Inches
 ___ Water-Stained Leaves
 ___ Local Soil Survey Data
 ___ FAC-Neutral Test
 ___ Other (Explain in Remarks)

Remarks: **Water-matted mulch.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
16		**10YR4/2**	**7.5YR3/4**	**Fine, common, prom**	**Loam**

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aqueous Moisture Regime
- _____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soils
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**

Wetland Hydrology Present? **Yes**

Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**J2**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Eleocharis macrostachya*	**H**	**OBL**	9. *Agrostis stolonifera*	**H**	**FACW**
2.			10. *Xanthium strumarium*	**H**	**FAC+**
3.			11. *Atriplex patula*	**H**	**FACW**
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Dominant is an OBL. Two of the three subdominants are FACW.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Water-matted vegetation.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
16"		**10YR4/2**	**7.5YR3/4**		

Hydric Soil Indicators:

______ Histosol
______ Histic Epipedon
______ Sulfidic Odor
______ Aqueous Moisture Regime
______ Reducing Conditions
__√__ Gleyed or Low-Chroma Colors

______ Concretions
______ High Organic Content in Surface Layer in Sandy Soils
______ Organic Streaking in Sandy Soils
______ Listed on Local Hydric Soils List
______ Listed on National Hydric Soils List
______ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	7/20/94
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor & Larry Stromberg, Ph.D.	State:	California
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	no	Plot ID:	J3

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	H	FAC	9. *Baccharis sarothroides*	S	FACW-
2. *Rumex acetosella*	H	FAC-	10. *Avena fatua*	H	NI
3. *Bromus diandrus*	H	NI	11. *Raphanus sativus*	H	UPL
4.			12. *Atriplex patula*	H	FACW
5.			13. *Rumex crispus*	H	FACW-
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 33%

Remarks: **Lacks dominance of hydrophytic vegetation.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No indicators.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
16"		**10YR3/2**	**7.5YR3/4**	**Prom**	

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aqueous Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
√	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**		
Wetland Hydrology Present?	**No**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**No**

Remarks: **Plot lacks any hydrologic indicators, and vegetation indicators, but has positive soil indicators. Soils in other upland sites also have low-chroma colors and thus may be due to type of fill material placed at site.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**J4**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Agrostis stolonifera*	H	FACW	9. *Eleocharis macrostachya*	H	OBL
2.			10. *Rumex crispus*	H	FACW-
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **All dominant and subdominant plants are either OBL or FACW.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Water-matted vegetation.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
16"		**10YR4/2**	**7.5YR3/4**	**Prom**	**Fine/Loam, Lots of roots, organic matter**

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**J5**

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Holcus lanatus*	**H**	**FAC**	9.	*Raphanus sativus*	**H**	**NI**
2.	*Heteromeles arbutifolia*	**S**	**NI**	10.			
3.	*Rumex acetosella*	**H**	**FAC-**	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **H–50% S–0%**

Remarks: **Non-hydric vegetation. Herbaceous layer dominated by FAC and FAC- species. Shrub layer consists of scattered Heteromeles.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **19"** (Inches)

Depth to Saturated Soil: **13"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No surface hydric indicators. Saturation zone and groundwater depth are just beyond the threshold levels. However, they are close enough to suggest in wet years this plot may be a wetland.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): —
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
12"		**10 YR 4/2**	**7.5 YR 3/4**	**Common/Prom**	**6", 12" fine clay loam**
12-20"		**Glayed 5G 4/1**			**20" bay mud**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Colormetric evidence. Lots of buried organic matter.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **No**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Plot lacks strong vegetation indicators and has no surface hydrologic indicators. Therefore, this year it was not a wetland. It is a transitional area however, and on wet years would be expected to show positive hydrologic indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**J6**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9. *Rumex crispus*	**H**	**FACW-**
2. *Rumex acetosella*	**H**	**FAC-**	10. *Lotus corniculatus*	**H**	**FAC**
3. *Bromus diandrus*	**S**	**NI**	11. *Juncus mexicanus*	**H**	**FACW**
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **33%**

Remarks: **Vegetation indicatiors are marginal--suggesting transition area. Scattered subdominants are more indicative of wetland.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **18"** (Inches)

Depth to Saturated Soil: **16"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- √ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No surface hydrologic indicators. Groundwater on April 20, 1994 was at the threshold level. On wet years, this plot may have more wetland indicators but not this year.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"		**7.5 YR 4/4**	**7.5 YR 4/4**	**Few/prom.**	**Clay loam**
12-16"		**7.5 YR 4/4**	**7.5 YR 4/4**		
16-20"		**Glayed 5G 4/1**			**Bay mud**

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aqueous Moisture Regime
- ___ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **No**

Wetland Hydrology Present? **No**

Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **This plot is located on a bench about 12-20" above the wetland of plot J4. It is similar to plot J5 in hydrology & soils but lack hydric vegetation indicators this year. In wet years, this plot may be in a wetland.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	**J7 (Piezometer II)**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Rumex acetocella*	H	FAC-	9. *Rumex crispus*	H	FACW-
2. *Lolium perenne*	H	FAC	10.		
3. *Bromus diandrus*	H	NI	11.		
4. *Holcus lanatus*	H	FAC	12.		
5. *Lotus corniculatus*	H	FAC	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 60%

Remarks: **Vegetation indicators are marginal. Site is very similar to plot J6.**

HYDROLOGY

____ Recorded Data (describe in remarks):
- ____ Stream, Lake, or Tide Guage
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (explain in remarks)

Remarks: **Piezometer data indicates that the groundwater level at this plot dropped very slowly and was within 18" of the ground surface for nearly one month.**

SOILS

Map Unit Name (Series and Phase): **Urban land - orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **–**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"		**7.5 YR 5/1**	**7.5 YR 4/4**	**Few/prom**	**Clay-loam**
12-16"		**7.5 YR 5/1**	**7.5 YR 4/4**		
16-20"		**Gleyed 56 4/1**			**Bay mud**

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aqueous Moisture Regime
- _____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- _____ Concretions
- _____ High Organic content in Surface Layer in Study Soils
- _____ Organic Streaking in Sandy Soils
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (explain in remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	
Wetland Hydrology Present?	Yes	
Hydric Soils Present?	Yes	Is this Sampling Point within a Wetland? Yes

Remarks: **The piezometer data suggests that this plot is in a wetland as do the soils, but the vegetation indicators are not as strong. In most years this plot would be expected to show more positive vegetation indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/93 & 3/1/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**K1**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Xanthium strumarium*	**H**	**FAC+**	9. *Hordeum hystrix*	**H**	**FAC**
2. *Polypogon monspeliensis*	**H**	**FACW+**	10. *Lolium perenne*	**H**	**FAC**
3.			11. *Rumex crispus*	**H**	**FACW-**
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**N/A**	(Inches)
Depth to Free Water in Pit:	**N/A**	(Inches)
Depth to Saturated Soil:	**N/A**	(Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Algae mats; water-matted mulch. Water pooling was observed on 3/1.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"		**2.5YR6/2**	**7.5YR3/4**	**Few, fine**	**Loam**

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aqueous Moisture Regime
- ___ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**K2 (Piezomete #10)**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	H	FAC	9. *Rumex crispus*	H	FACW-
2. *Bromus mollis*	H	NI	10. *Hordeum leporinum*	H	NI
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks:

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **11-24"** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No surface ponding, piezometer indicates ground water can be shallow but drains very fast. The goundwater dropped more than 1.5 after the rains.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
6"		**10YR4/2**	**NA**		**Fine sandy loam**

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aqueous Moisture Regime
Reducing Conditions
√ Gleyed or Low-Chroma Colors

Concretions
High Organic Content in Surface Layer in Sandy Soils
Organic Streaking in Sandy Soils
Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (Explain in Remarks)

Remarks: **No motles but low chroma color.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **No**
Hydric Soils Present? **No**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Lacks hydrologic and soils indicators. Vegetation indicators are marginal at best.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/25/93 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	L1

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Raphanus sativus*	H	NI	9. *Atriplex patula*	H	FACW
2. *Polygonum hydropiper*	H	OBL	10. *Eleocharis macrostachya*	H	OBL
3. *Juncus mexicanus*	H	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks: **This plot was taken in a large depression surrounded by an earthen berm. The shift in vegetation up the slopes of the berm from wetland indicators to upland indicators was sharp and distinct.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
 ___ Stream, Lake, or Tide Gauge
 ___ Aerial Photographs
 ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
 √ Inundated
 ___ Saturated in Upper 12 Inches
 ___ Water Marks
 ___ Drift Lines
 ___ Sediment Deposits
 ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
 ___ Oxidized Root Channels in Upper 12 Inches
 ___ Water-Stained Leaves
 ___ Local Soil Survey Data
 ___ FAC-Neutral Test
 √ Other (Explain in Remarks)

Remarks: **Algae mats common. Water ponding was observed on 3/1/94 but site was dry by 4/20/94.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"		**10YR4/2**	**7.5YR3/5**		

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aqueous Moisture Regime
Reducing Conditions
√ Gleyed or Low-Chroma Colors

Concretions
High Organic Content in Surface Layer in Sandy Soils
Organic Streaking in Sandy Soils
Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/27/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**L2**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Agrostis stolonifera*	**H**	**FACW**	9. *Raphanus sativus*	**H**	**UPL**
2. *Juncus mexicanus*	**H**	**OBL**	10. *Epilobium Watsonii*	**H**	**FACW**
3.			11. *Holcus lanatus*	**H**	**FAC**
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks:

HYDROLOGY

___ Recorded Data (Describe In Remarks):
  ___ Stream, Lake, or Tide Gauge
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ___ Inundated
  ___ Saturated in Upper 12 Inches
  ___ Water Marks
  ___ Drift Lines
  ___ Sediment Deposits
  ___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ___ Oxidized Root Channels in Upper 12 Inches
  ___ Water-Stained Leaves
  ___ Local Soil Survey Data
  ___ FAC-Neutral Test
  √ Other (Explain in Remarks)

Remarks: **Algae mats.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"		**10YR4/2**	**7.53/4**	**Rare**	**Very fine clay loam**

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aqueous Moisture Regime
- Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This wetland extends to the east side of the fence separating the airport property from the Caltrans right-of-way. It is dominated by vegetation indicative of wetland, has evidence of surface ponding of water by the algal mats, and has hydric soil color indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/27/94 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	L3

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Rumex acetosella*	H	FAC-	9. *Holcus lanatus*	H	FAC
2. *Lolium perenne*	H	FAC	10. *Rumex crispus*	H	FACW-
3. *Baccharis pilularis*	S	NI	11. *Circium californica*	H	NI
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **0%S 50%H**

Remarks: **Vegetation indicators are marginal suggesting that in years this area would support more wetland indicators. The presence of the Baccharis, however, also suggests this site is dry most years.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **>18"** (Inches)

Depth to Saturated Soil: **>18"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- √ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No surface hydrologic indicators. A 18" pit revealed no ground water or saturated soils. However, there were oxidized root channels within the first 12".**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"		**10YR3/2**	**7.5YR3/4**	**Prom**	**Clay loam concretions**

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aqueous Moisture Regime
- Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **A site that lacks strong vegetation indicators, has no hydrology indicators but strong soil indicators. Marginal wetland at best but classified as non-wetland here.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor**

Date: **4/20/94**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No
Is the area a potential Problem Area? No

Community ID:
Transect ID:
Plot ID: L4

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Silybum marianum*	H	NI	9. *Avena fatua*	H	NI
2. *Raphanus sativus*	H	NI	10. *Lactuca serriola*	H	FAC
3. *Bromus diandrus*	H	NI	11. *Viscia sativa*	H	NI
4. *Geranium carolinianum*	H	NI	12.		
5. *Picris echioides*	H	FAC	13.		
6. *Rumex acetocella*	H	FAC-	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 17%

Remarks: **Plot is on slope of earthen berm between wetlands L1 & L2. Lacks hydric vegetation indicators.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)
Depth to Free Water in Pit: N/A (Inches)
Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **Lacks hydrology wetland indicators.**

SOILS

Map Unit Name (Series and Phase): Urban land – orthents

Drainage Class: 0-2% slopes

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: **A soil sample was not taken at this point because vegetation does not indicate wetlands and there is an obvious point up the slope where the vegetation shifts from wetlands of plot L2 to uplands. No hydrologic evidence as well.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**		
Wetland Hydrology Present?	**No**		
Hydric Soils Present?	**NA**	Is this Sampling Point Within a Wetland?	**No**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/25/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**M1**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Eleocharis macrostachya*	H	OBL	9. *Atriplex patula*	H	FACW
2. *Xanthium strumarium*	H	FAC+	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **All dominant and sub-dominant plant species are wetland indicators.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Water-matted vegetation (mulch).**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18		**10YR3/1.5**	**7.5YR3/4**	**Few, fine**	**Heavy Clay loam**
			10YR4/2		

Hydric Soil Indicators:

______ Histosol
______ Histic Epipedon
______ Sulfidic Odor
______ Aqueous Moisture Regime
______ Reducing Conditions
__√__ Gleyed or Low-Chroma Colors
______ Concretions
______ High Organic Content in Surface Layer in Sandy Soils
______ Organic Streaking in Sandy Soils
______ Listed on Local Hydric Soils List
______ Listed on National Hydric Soils List
______ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This plot is located at the bottom of a large depression with a steep slope to the uplands.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/25/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**M2**

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Lolium perenne*	**H**	**FAC**	9.	*Vulpia bromoides*	**H**	**FACW**
2.				10.	*Bromus mollis*	**H**	**NI**
3.				11.	*Picris echioides*	**H**	**FAC**
4.				12.	*Rumex crispus*	**H**	**FACW-**
5.				13.	*Raphanus sativus*	**H**	**NI**
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **This plot is located at a higher elevation (2-3 feet) above plot M1 and M3. The vegetation is a mix of wetland and upland indicators. The dominant species is a FAC which occurs in wetlands 50% of the time.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ____ Inundated
  ____ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **No indicators.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): —
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16		**10YR4/2**	**N/A**	**N/A**	**Fine silt loam**

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: **Low chroma color may be due to type of fill material placed at this site. No mottles.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**No**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Vegetation indicators are marginal and site lacks hydrologic and soil indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	7/25/93 & 4/4/94
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor & Larry Stromberg, Ph.D.	State:	California
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	M3

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Raphanus sativus*	H	NI	9. *Atriplex patula*	H	FACW
2. *Juncus mexicanus*	H	FACW	10. *Lactuca serriola*	H	FAC
3. *Picris echioides*	H	FAC	11. *Lolium perenne*	H	FAC
4. *Xanthium strumarium*	H	FAC+	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **75%**

Remarks: **Wild radish assumed to exert late-season dominance; currently (late-season) subdominants compose hydrophytic vegetation much of growing season. Re-examination in April confirmed this. Three hydrophytic veg. then shared dominance with *Raphanus*.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Light algal mats; algae-matted mulch. There is a narrow water course from a pipe near the road. Reddish water (high in iron?) is coming out of the pipe into the wetland.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16		**10YR4/2**	**7.5YR3/4**	**Few, fine**	**Sandy loam**

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This plot is at the same approximate elevation as plot M1. Although the dominant plant taxa was the wild radish in July, all the subdominants are FAC and FACW species and three became more dominant in the spring. This combined with the hydrologic and soils would suggest this is a wetland.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/25/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**M4**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Salix lasiolepis*	**S/T**	**FACW**	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **No understory.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
  ___ Stream, Lake, or Tide Gauge
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Aerial roots 12-24" above ground (common); assumed to indicate standing water to that depth (similar elev. to upper limits of algal mats at site M3. Aerial roots at 6" above ground w/in 20' of western willow canopy limits (associated w/ trees that formed western canopy).**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-15		10YR4/3	10YR4/2	Common, fine	Sand (fine)

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aqueous Moisture Regime
- ___ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- √ Other (Explain in Remarks)

Remarks: **Assumed aquatic moisture regime w/o colorimetric or visible evidence due to coarse soil texture. Mottles associated with finer textures.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**

Wetland Hydrology Present? **Yes**

Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This plot was placed in a willow thicket with sandy and silty soil. The presence of aerial roots at the base of the trees suggest that water ponds in this area, and the soils remain saturated for extended periods of time.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/25/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**M5**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Salix lasiolepis*	**S/T**	**FACW**	9. *Holcus lanatus*	**H**	**FAC**
2. *Raphanus sativus*	**H**	**NL**	10. *Avena fatua*	**H**	**FAC**
3. *Agrostis stolonifera*	**H**	**NL**	11. *Carduus pycnocephalus*	**H**	**NL**
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **100% Overstory**
0% ground layer

Remarks: **Vegetation not hydrophytic.**

HYDROLOGY

____ Recorded Data (describe in remarks):
- ____ Stream, Lake, or Tide Guage
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (explain in remarks)

Remarks: **No visible surface hydro indicators.**

SOILS

Map Unit Name
(Series and Phase): **Urban land - orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **–**

Field Observations
Confirm Mapped Type? **yes**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10		**10 YR 4/4**			**Fine sand**

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aqueous Moisture Regime
- _____ Reducing Conditions
- _____ Gleyed or Low-Chroma Colors
- _____ Concretions
- _____ High Organic content in Surface Layer in Study Soils
- _____ Organic Streaking in Sandy Soils
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (explain in remarks)

Remarks: **No hydric soil indicators.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**No**

Is this Sampling Point within a Wetland? **No**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/27/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**M6**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Conium maculatum*	**H**	**NI**	9. *Rumex crispus*	**H**	**FACW-**
2. *Raphanus sativus*	**H**	**NI**	10. *Lactuca serriola*	**H**	**FAC**
3. *Atriplex patula*	**H**	**FACW**	11. *Xanthium strumarium*	**H**	**FAC+**
4. *Hemizonia* species	**H**	**NI**	12. *Sonchus oleraceus*	**H**	**NI**
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **25%**

Remarks: **This plot is located on a peninsula of upland habitat extending out into the large depression. It is approximately 2-4 feet in elevation above the bottom elevation of the depression and plot M4.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No hydrologic indicators.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): —
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"		**10 YR 4/2**			**Fine silt loam**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Low-chroma soils w/o mottles, lacking vegetation and hydrologic indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/27/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**M7**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Epilobium watsonii*	**H**	**FACW**	9. *Lactuca serriola*	**H**	**FAC**
2. *Centaurea melitensis*	**H**	**NI**	10. *Lotus corniculatus*	**H**	**FAC**
3. *Raphanus sativus*	**H**	**NI**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **33%**

Remarks: **This plot is located in an area with mounds of fill soil, possibly dredge spoils from Cupid Row Canal and unconsolidated fill from various sites.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
    ___ Stream, Lake, or Tide Gauge
    ___ Aerial Photographs
    ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No hydrologic indicators.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): —
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"		**10YR4/4**			

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aqueous Moisture Regime
- Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**	
Wetland Hydrology Present?	**No**	
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland? **No**

Remarks: **Low-chroma soils w/o mottles, lacking vegetation and hydrologic indicators. Similar to plot M6.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/27/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**M8**

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Xanthium strumarium*		**FAC+**	9.			
2.				10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Cocklebur forms a 100% groundcover in an area that is in a depression below plot M7, which forms an obvious boundary .**

HYDROLOGY

☐ Recorded Data (Describe In Remarks):
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☑ Other (Explain in Remarks)

Remarks: **Water-matted vegetation.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18		**10YR3/15**	**7-5YR3/4**	**Few, fine**	**Clay loam**
			10YR4/2		

Hydric Soil Indicators:

______ Histosol
______ Histic Epipedon
______ Sulfidic Odor
______ Aqueous Moisture Regime
______ Reducing Conditions
√ Gleyed or Low-Chroma Colors
______ Concretions
______ High Organic Content in Surface Layer in Sandy Soils
______ Organic Streaking in Sandy Soils
______ Listed on Local Hydric Soils List
______ Listed on National Hydric Soils List
______ Other (Explain in Remarks)

Remarks: **Similar to site M1.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Vegetation is strongly positive, and the combination of + hydrologic and soil indicators define the wetland.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/4/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**M9**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Raphanus sativus*	**H**	**NI**	9. *Typha latifolia*	**H**	**OBL**
2. *Rumex crispus*	**H**	**FACW-**	10.		
3. *Xanthium strumarium*	**H**	**FAC+**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **33%**

Remarks: **All of the annual vegetation was dead; sprouts were just starting to come up. This plot is at the edge of the green upland vegetation on the fill to the west, which is at its highest point 2 feet above this plot (plot M6). The general topography of depression grades to the west greatly.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- √ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **2-3** (Inches)

Depth to Free Water in Pit: **17"** (Inches)

Depth to Saturated Soil: **18"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ___ Saturated in Upper 12 Inches
- √ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Water stains on standing stems indicate 2-3" deep. Groundwater level was within 18" of ground surface.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"		**10YR3/1**	**10YR4/4**	**Common**	**Loam high in organics.**

Hydric Soil Indicators:

______ Histosol
______ Histic Epipedon
______ Sulfidic Odor
______ Aqueous Moisture Regime
______ Reducing Conditions
__√__ Gleyed or Low-Chroma Colors
______ Concretions
______ High Organic Content in Surface Layer in Sandy Soils
______ Organic Streaking in Sandy Soils
______ Listed on Local Hydric Soils List
______ Listed on National Hydric Soils List
______ Other (Explain in Remarks)

Remarks: **Similar to site M1.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **There is a sharp line between the wetland and upland. Conium is sprouting in upland ~2-3" above where the pit was dug, which means that it would be ~19-20" above the ground water.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	10/22/93
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor	State:	California
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	N1

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Lolium perenne*	H	FAC	9.	*Picris echioides*	H	FAC
2.	*Salix lasiolepis*	T	FACW	10.	*Rumex crispus*	H	FACW-
3.	*Rubus discolor*	S	FACW	11.	*Holcus lanatus*	H	FAC
4.				12.	*Plantago coronopus*	H	FAC
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 100% H, T, S

Remarks:

HYDROLOGY

___ Recorded Data (describe in remarks):
- ___ Stream, Lake, or Tide Guage
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (explain in remarks)

Remarks: Algal mats observed scattered throughout the area.

SOILS

Map Unit Name (Series and Phase): **Urban land - orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): –

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6"		**7.5 YR 4/2**			**Sandy loam**
6-12"		**2.5 YR 6/4**	**10 YR 5/8**	**Few/prom.**	**Sand & rocks**

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aqueous Moisture Regime
√ Reducing Conditions
Gleyed or Low-Chroma Colors

Concretions
High Organic content in Surface Layer in Study Soils
Organic Streaking in Sandy Soils
Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (explain in remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? Yes
Hydric Soils Present? Yes

Is this Sampling Point within a Wetland? Yes

Remarks: **This plot is located in the bottom of a deep depression with steep banks between two railroad track alignments. There is an obvious shift in vegetation between the wetlands at the bottom of the depression and the uplands further up the banks.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**10/22/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**N2**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	H	FAC	9. *Rumex crispus*	H	FACW-
2. *Cynodon dactylon*	H	FAC	10. *Holcus lanatus*	H	FAC
3. *Lotus corniculatus*	H	FAC	11. *Picris echioides*	H	FAC
4. *Salix lasiolepis*	T	FACW	12. *Raphanus sativus*	H	NI
5. *Rubus discolor*	S	FACW	13. *Cyperus eragrostis*	H	FACW
6.			14. *Equisetum palustre*	H	FACW
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **100% H, T, S**

Remarks:

HYDROLOGY

____ Recorded Data (describe in remarks):

____ Stream, Lake, or Tide Guage

____ Aerial Photographs

____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:

____ Inundated

____ Saturated in Upper 12 Inches

____ Water Marks

____ Drift Lines

____ Sediment Deposits

____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

____ Oxidized Root Channels in Upper 12 Inches

____ Water-Stained Leaves

____ Local Soil Survey Data

____ FAC-Neutral Test

√ Other (explain in remarks)

Remarks: **Algal mats observed scattered throughout the area.**

SOILS

Map Unit Name (Series and Phase): **Urban land - orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): –

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6"		**7.5 YR 4/2**			**Sandy loam**
6-12"		**2.5 YR 6/4**	**10 YR 5/8**	**Few/prom.**	**Sandy rocky**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
__√__ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic content in Surface Layer in Study Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (explain in remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes
Wetland Hydrology Present?	Yes
Hydric Soils Present?	Yes

Is this Sampling Point within a Wetland? Yes

Remarks: **Repeat NI**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/25/93 & 4/4/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**No**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**Yes**	Transect ID:	
Is the area a potential Problem Area?	**Yes**	Plot ID:	**O1**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Distichlis spicata*	**H**	**FACW**	9. *Lolium perenne*	**H**	**FAC**
2. *Salicornia pacifica*	**H**	**OBL**	10. *Frankenia grandifolia*	**H**	**FACW**
3. *Juncus bufonis*	**H**	**FACW+**	11. *Polypogon monspeliensis*	**H**	**OBL**
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Deep depression with saline tolerant plant species. All of the dominant plant species are FACW or obligates. Therefore, this is a wetland.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ____ Saturated in Upper 12 Inches
- √ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: Salt **deposits on soil surface. Remnant of salt marsh.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): **—**
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16		**10YR4/2**	**10YR4/3**	**Common silt layers**	
			7.5YR3/4	**Few, faint**	

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
√ Gleyed or Low-Chroma Colors
____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks: **Laminated silts and silty clays (fill).**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This plot is within an area that has been recently burned and thus normal circumstances did not exist at the time the first set of data was collected. However, burned stubble of saltgrass and clumps of pickleweed would suggest this area is a wetland. Surface hydrologic indicators were found in the form of ponding and salt deposits on soil surfaces. Soils do indicate wetland conditions.**

DATA FORM
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Project/Site:	**BART SFO EXTENSION**	Date:	**7/25/93 & 4/4/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**No**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**Yes**	Transect ID:	
Is the area a potential Problem Area?	**Yes**	Plot ID:	**O2**

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Xanthium strumarium*	**H**	**FAC+**	9.	*Picris echioides*	**H**	**FAC**
2.	*Atriplex patula*	**H**	**FACW**	10.	*Raphanus sativus*	**H**	**NI**
3.	*Rumex crispus*	**H**	**FACW-**	11.	*Polygonum hydropiper*	**H**	**OBL**
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **66%**

Remarks: **This plot is a depression surrounded by what appears to be dredge spoils. Vegetation is strong indicator for wetland.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**N/A**	(Inches)
Depth to Free Water in Pit:	**(2/9/94)** **10-18'**	(Inches)
Depth to Saturated Soil:	**o"**	(Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- √ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Limited water-matted mulch. Soil pit dug with Army COE on 2/9/94; filled with water well above the 18" of soil surface. Soils were saturated as was entire site on 2/9/94.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16		**10YR3/2**	**7.5YR3/4**	**Few, faint**	
		10YR4/2		**Common**	

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Dark, mottled soils typical of much of this area.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **All three parameters are in evidence. Vegetation was stronger indicator than surrounding sites. Shallow ground water corroborates vegetation indicators. Soils are consistent for entire area.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/31/93 & 4/4/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**No**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**Yes**	Plot ID:	**O3**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Epilobium watsonii*	**H**	**FACW**	9. *Rumex crispus*	**H**	**FACW-**
2. *Picris echioides*	**H**	**FAC**	10. *Distichlis spicata*	**H**	**FACW**
3. *Avena barbata*	**H**	**NI**	11. *Juncus bufonis*	**H**	**FAC+**
4. *Bromus mollis*	**H**	**NI**	12.		
5. *Lolium perenne*	**H**	**FAC**	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **60%**

Remarks: **Burned area expected to have been *Lolium* stand just like site O7. Later in season, had lots of epilobium and upland grasses.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No surface hydrologic indicators. Nearby piezometer was consistently below 18".**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
16		**7.5YR4/1**	**7.5YR4/4**		

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aqueous Moisture Regime
- _____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soils
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks: **Soils typical of those found elsewhere in this area.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **No**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **This is a problem area because it has been recently burned. It appears that salt grass is moving into the area that may have been dominated by rye and other upland grasses. Hydrologic indicators do not exist. Piezometer data indicated subsurface saturation zone below 18". Soils are positive.**

DATA FORM
ROUTINE WETLAND DETERMINATION
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Project/Site:	BART SFO EXTENSION	Date:	8/31/93 & 4/4/94
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor & Larry Stromberg, Ph.D.	State:	California
Do Normal Circumstances exist on the site?	No	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	Yes	Transect ID:	
Is the area a potential Problem Area?	Yes	Plot ID:	O4

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Raphanus sativus*	H	NI	9.	*Epilobium watsonii*	H	FACW
2.	*Centaurea melitensis*	H	NI	10.	*Picris echioides*	H	FAC
3.				11.	*Rumex crispus*	H	FACW-
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: **The dominant species are not wetland indicators. These plots are located on sites of higher elevation on mounded berms.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: >18" (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No hydrologic indicators. Piezometer data at nearby site 09 was consistently below 18" with no surface ponding indicators. No other hydrologic indicators.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10		**10YR4/1**			

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Lacks vegetation and hydrologic indicators. Dark soils but lacks vegetation and hydrologic indicatos. These fill soils may have come from a wetland (dredge spoils from Cupid Rows Canal?). Soils are consistently dark throughout this area.**

DATA FORM
ROUTINE WETLAND DETERMINATION
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Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor & Larry Stromberg, Ph.D.**

Date: **8/31/93 & 4/4/94**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **No**
Is the site significantly disturbed (Atypical Situation)? **Yes**
Is the area a potential Problem Area? **Yes**

Community ID: ______
Transect ID: ______
Plot ID: **O5**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Plantago coronopus*	**H**	**FAC**	9. *Polypogon monspeliensis*	**H**	**OBL**
2. *Lolium perenne*	**H**	**FAC**	10. *Hordeum hystrix*	**H**	**FAC**
3. *Atriplex patula*	**H**	**FACW**	11. *Lactuca serriola*	**H**	**FAC**
4. *Hemizonia* species	**H**	**NI**	12. *Epilobium watsonii*	**H**	**FACW**
5. *Rumex crispus*	**H**	**FACW-**	13.		
6. *Lotus corniculatus*	**H**	**FAC**	14.		
7. *Picris echioides*	**H**	**FAC**	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **86%**

Remarks: **A depression surrounded by mounded (dredge spoils?) soils. More hydric vegetation indicators than surround areas which contain many of the same species but less diversity (see plot O10).**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
  ___ Stream, Lake, or Tide Gauge
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **2-3 (2-9-4)** (Inches)
Depth to Free Water in Pit: ______ (Inches)
Depth to Saturated Soil: **0** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  √ Inundated
  √ Saturated in Upper 12 Inches
  ___ Water Marks
  ___ Drift Lines
  ___ Sediment Deposits
  ___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ___ Oxidized Root Channels in Upper 12 Inches
  ___ Water-Stained Leaves
  ___ Local Soil Survey Data
  ___ FAC-Neutral Test
  ___ Other (Explain in Remarks)

Remarks: **In deepest areas, there are remnants of water matted vegetation.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1st pit 4-6					**Very rocky, unconsolidated;**
					chunks of asphalt and rock
2nd pit 0-12		**10YR 4/2**	**7.5YR 3/4**		**Clay loam**
					Bay mud

Hydric Soil Indicators:

______ Histosol
______ Histic Epipedon
______ Sulfidic Odor
______ Aqueous Moisture Regime
______ Reducing Conditions
______ Gleyed or Low-Chroma Colors
______ Concretions
______ High Organic Content in Surface Layer in Sandy Soils
______ Organic Streaking in Sandy Soils
______ Listed on Local Hydric Soils List
______ Listed on National Hydric Soils List
______ Other (Explain in Remarks)

Remarks: **Unable to characterize the soils–more like unconsolidated fill in the first pit. Second pit nearer center of wetland is clay-loam; then Bay mud within 12" of the surface.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This area is in a slight depression surround by mounds of material. Given Bay mud is within 12" of surface, surface ponding was evident and hydrologic indicators are verified with vegetation indicators, this is a wetland.I Soils are unconsolidated fill; and except for shallow, do not provide good indication.**

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Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**No**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**Yes**	Transect ID:	
Is the area a potential Problem Area?	**Yes**	Plot ID:	**O6**

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Centaurea melitensis*	H	NI	9.	*Picris echioides*	H	FAC
2.				10.	*Rumex crispus*	H	FAC-
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **0%**

Remarks: **Burned area. This plot is located at the highest point between plots 01 and 03.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

_√_ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**N/A**	(Inches)
Depth to Free Water in Pit:	**N/A**	(Inches)
Depth to Saturated Soil:	**N/A**	(Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No hydrologic indicators.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
8		**10YR4/1**			

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
√ Gleyed or Low-Chroma Colors

____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks: **Dark soils typical of this area.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **No**
Wetland Hydrology Present? **No**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Low-chroma soils but lacks + vegetation and hydrologic indicators.**

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Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**No**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**Yes**	Transect ID:	
Is the area a potential Problem Area?	**Yes**	Plot ID:	**O7 (Piezometer 2)**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9. *Avena fatua*	**H**	**NI**
2.			10. *Rumex crispus*	**H**	**FAC-**
3.			11. *Atriplex patula*	**H**	**FACW**
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: ***Lolium* dominates this area.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **>18"** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No visible surface hydrolic indicators, and piezometer data was consistently below 18". On 2/9/94, after rainfall, the ground water was within 23" of surface. Never got closer.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
16		**7.5YR4/1**	**7.5YR4/4**	**Rare 1%**	**Heavy clay**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Unconsolidated fill–appears to be mud. Dredge spoils from Cupid Row Canal(?).**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Although these clays would retain moisture and remain saturated for a portion of the wet season, the ground water is greater than 18" below the surface, there was no evidence of ponding and vegetation is marginal.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/27/93 & 4/4/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**No**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**Yes**	Transect ID:	
Is the area a potential Problem Area?	**Yes**	Plot ID:	**O8**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Elymus triticoides*	**H**	**FAC+**	9.		
2.			10. *Picris echioides*	**H**	**FAC**
3.			11. *Rumex crispus*	**H**	**FACW-**
4.			12. *Centaurea melitensis*	**H**	**NI**
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Half this site has been burned. This plot is located at a higher elevation than plot O1 and is approximately equal to plot O6.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No hydrologic indicators.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16		**10YR4/2**	**7.5YR3/4**	**Faint, uncommon**	**Silt layers**

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: **Pit was placed at edge of unburned area. Dark soils typical of the area.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**

Wetland Hydrology Present? **No**

Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Marginal vegetation indicators, no hydrologic indicators and marginal soils w/ faint and uncommon mottles.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**2/9/94-4/4/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**No**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**Yes**	Transect ID:	
Is the area a potential Problem Area?	**Yes**	Plot ID:	**O9 (Piezometer 1)**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Rumex crispus*	**H**	**FACW-**	9.		
2. *Atripex patula*	**H**	**FACW**	10.		
3. *Raphanus sativus*	**H**	**NI**	11.		
4. *Lolium perenne*	**H**	**FAC**	12.		
5. *Picris echioides*	**H**	**FAC**	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **80%**

Remarks: **This site is located in a slight depression surrounded by upland areas of what appear to be dredge spoils.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: ***** (Inches)

Depth to Saturated Soil: **0"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: ***This is Piezometer site #1. Ground water levels ranged from 20 to 24 but never got within 18" of the surface. There were no indications of surface water ponding.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): **—**
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18		**10YR4/2-2**	**7.5YR3/4**		**Clay-loam**
18-24"					**Bay mud**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
__√__ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Unconsolidated fill-over bay muds. Fill soils are reduced and hydric.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **No**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Site lacks any strong hydrologic indicators. Soils remain saturated through portion of wet season but moisture moves through first 18" rapidly. Vegetation responds to periods of saturation and drying.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/4/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**No**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**Yes**	Transect ID:	
Is the area a potential Problem Area?	**Yes**	Plot ID:	**O10**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	H	FAC	9. *Rumex crispus*	H	FAC-
2. *Picris echioides*	H	FAC	10. *Geranium carolinianum*	H	NI
3. *Bromus mollis*	H	NI	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **66%**

Remarks: **The vegetation is typical of surrounding areas. Dominant assembled.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ____ Inundated
  ____ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **There are no hydrologic indicators.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		**10YR3/1**	**—**		**Clay-loam**

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aqueous Moisture Regime
- Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks: **Unconsolidated fill-over bay muds. Fill soils are reduced and hydric.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**

Wetland Hydrology Present? **No**

Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Plot lacks any hydrology indicators. The vegetation assemblage is typical over much of this site, suggesting a transitional area.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/4/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**No**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**Yes**	Transect ID:	
Is the area a potential Problem Area?	**Yes**	Plot ID:	**O11 (Piezometer 4)**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Avena fatua*	H	NI	9. *Lotus corniculatus*	H	FAC
2. *Bromus mollis*	H	NI	10. *Epilobium watsonii*	H	FACW
3. *Picris echioides*	H	FAC	11.		
4. *Medicago polymorpha*	H	NI	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **25%**

Remarks: **This plot is in a depression surrounded by mounds of soil. Lush grassland after a fire.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No surface ponding. Ground water was consistently at 22" below the ground surface.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"		**10YR3/2**	**—**		**Clay-loam**

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
__√__ Gleyed or Low-Chroma Colors

____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks: **No mottles but dark soil.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Although this plot was in a larger depression, it did not support dominant hydric vegetation. There was no evidence of surface ponding and the ground water was consistently below 18" of the surface. The dark soils are consistent with other locations in this area.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor**

Date: **4/4/94**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **No**
Is the site significantly disturbed (Atypical Situation)? **Yes**
Is the area a potential Problem Area? **Yes**

Community ID: ___
Transect ID: ___
Plot ID: **O12**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Bromus mollis*	H	NI	9. *Rumex crispus*	H	FACW-
2. *Lythrum hyssopifolia*	H	FACW	10. *Erodium cicutarium*	H	NI
3. *Plantago coronopus*	H	FAC	11. *Cyperus eragrostis*	H	FACW
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **66%**

Remarks: **This plot is an obvious depression surrounded by steep slopes of mounded dirt.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **0-6"** (Inches)
Depth to Free Water in Pit: ___ (Inches)
Depth to Saturated Soil: ___ (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **On 2/9/94, the plot had standing water. On 4/4/94, it was dry, but algal mats covered the ground surface.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"		**10YR 3/4**	**7.5YR 3/2**	**Common**	**Sandy-loam**

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- _√_ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: **No mottles but dark soil.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**

Wetland Hydrology Present? **Yes**

Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Thsi plot has all three indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor**

Date: **4/4/94**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **No**
Is the site significantly disturbed (Atypical Situation)? **Yes**
Is the area a potential Problem Area? **Yes**

Community ID: ___
Transect ID: ___
Plot ID: **P1**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Cyperus eragrostis*	**H**	**FACW**	9. *Lotus corniculatus*	**H**	**FAC**
2. *Lythrum hyssopifolia*	**H**	**FACW**	10. *Plantago coronopus*	**H**	**FAC**
3. *Juncus bufonis*	**H**	**FACW+**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **All vegetation in the spring are wetland indicators.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
  ___ Stream, Lake, or Tide Gauge
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)
Depth to Free Water in Pit: **N/A** (Inches)
Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  √ Inundated
  ___ Saturated in Upper 12 Inches
  ___ Water Marks
  ___ Drift Lines
  ___ Sediment Deposits
  ___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ___ Oxidized Root Channels in Upper 12 Inches
  ___ Water-Stained Leaves
  ___ Local Soil Survey Data
  ___ FAC-Neutral Test
  √ Other (Explain in Remarks)

Remarks: **Inundation on 2/9/94 but dry with algal mats on 4/4/94.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
12"		**10 YR 4/4**			

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
__√__ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Similar to plots P3 & P4.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This is a shallow depression immediately next to the dirt & gravel road which has tire marks and is badly disturbed. Strong vegetation & hydrology indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/27/93 & 4/4/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**P2**

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Xanthium strumarium*	H	FAC+	9.	*Rumex crispus*	H	FACW-
2.	*Plantago coronopus*	H	FAC	10.	*Salicornia pacifica*	H	OBL
3.	*Cotula coronopifolia*	H	FAC+	11.	*Lolium perenne*	H	FAC
4.	*Eleocharis macrostachya*	H	OBL	12.	*Crypsus niliaca*	H	OBL
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks:

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Pooled water observed on 2/9/94. Algal mats on the soil surface during 4/4/94 site visit would suggest the inundation period is greater than seven days.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
16"		**7.5 YR 4/1**	**10 YR 5/6**	**Common**	

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aqueous Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
√	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

Remarks: **Very dark soils with common mottles.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **This plot is located in a contained depression behind an earthen levee and next to an elevated pump station. Water pools in this area resulting in a sharp boundary zone between the obvious wetland and the more upland vegetation of plot P3.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/27/93 & 4/4/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**P3**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9. *Lactuca serriola*	**H**	**FAC**
2. *Avena fatua*	**H**	**NI**	10. *Picris echioides*	**H**	**FAC**
3. *Bromus mollis*	**H**	**NI**	11. *Epilobium watsonii*	**H**	**FACW**
4.			12. *Rumex crispus*	**H**	**FACW-**
5.			13. *Plantago coronopus*	**H**	**FAC**
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **30%**

Remarks: **There is a sharp boundary between the wetland of P2 and this plot which is dominated by the grasses. All the obligate species drop out and the upland grasses are among the dominants.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **9" - 25"** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No surface hydrologic indicators, ground water at nearby piezometer #5 was less than 18" below the surface for a short period after seasonal rains but dropped below 18" within 6 days of when greater than 50% of the normal rainfall had occurred. On wet years, this plot may well have hydrologic indicators and on dry years it lacks positive hydrologic indicators.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"		10 YR 4/4			Fine sand silt

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
√ Gleyed or Low-Chroma Colors
____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks: **Compacted sand within 6-7" of the ground surface. The upper 6" was saturated on 2/9 but not so on 4/4.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **No**
Wetland Hydrology Present? **No**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **This is a transitional area where on wet years the dominant vegetation may shift towards wetland indicators and groundwater would be within 18" of the surface. On dry years, this area falls out because the dominant vegetation is annual upland species.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/27/93 & 4/4/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**P4 (Piezometer #5)**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Avena fatua*	H	NI	9. *Lactuca serriola*	H	FAC
2. *Lolium perenne*	H	FAC	10. *Epilobium watsonii*	H	FACW
3. *Plantago lanceolata*	H	FAC-	11.		
4. *Bromus mollis*	H	NI	12.		
5. *Lotus corniculatus*	H	FAC	13.		
6. *Geranium carolinianum*	H	NI	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **33%**

Remarks: **Upland grasses & forbs dominate in spring.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No surface hydrologic indicators. Ground water was within 18" of the ground surface 3 days after rains but dropped below 18" soon after.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
8-10"		**10 YR 4/4**			**Fine sand silt**

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aqueous Moisture Regime
- _____ Reducing Conditions
- _____ Gleyed or Low-Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soils
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks: **Compacted sand within 6-7" of surface. Upper 6" was saturated on 2/9 but not so on 4/4.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **No**
Hydric Soils Present? **No**

Is this Sampling Point Within a Wetland? **No**

Remarks: **This plot is slightly higher than plot P3. A piezometer was put at this site. There are fewer wetland indicator plant species and the soils and hydrologic indicators are about the same as plot P3.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/4/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**P5**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Juncus bufonis*	**H**	**FACW+**	9. *Cyperus eragrostis*	**H**	**FACW**
2. *Lythrum hyssopifolia*	**H**	**FACW**	10. *Lotus corniculatus*	**H**	**FAC**
3.			11. *Plantago coronopus*	**H**	**FAC**
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **A small (30' x 10') isolated depression within the grassland. Vegetation boundaries are sharply defined with adjacent upland grasses.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**N/A**	(Inches)
Depth to Free Water in Pit:	**N/A**	(Inches)
Depth to Saturated Soil:	**N/A**	(Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Algal mats on the surface of depression bottom.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
12"		**10 YR 4/4**			

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Similar structure and colors to P3 & P4.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This is a depression behind the Cupid Row Canal levee and may be a remnant of an old drainage ditch. Boundaries are rather sharp based upon vegetation indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	4/4/94
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor	State:	California
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	P6

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Juncus bufonis*	H	FACW+	9. *Cyperus eragrostis*	H	FACW
2. *Lythrum hyssopifolia*	H	FACW	10. *Lotus corniculatus*	H	FAC
3.			11. *Plantago coronopus*	H	FAC
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: **A narrow linear depression. Vegetation boundaries are sharply defined with adjacent upland grasses.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Algal mats on the surface of depression bottom.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
12"		**10 YR 4/4**			

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
__√__ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Similar structure and colors to P3 & P4.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This is a depression behind the Cupid Row Canal levee and may be a remnant of an old drainage ditch. Boundaries are rather sharp based upon vegetation indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/25/93 & 2/9/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**Yes**	Plot ID:	**Q1**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9. *Xanthium strumarium*	**H**	**FAC+**
2. *Holcus lanatus*	**H**	**FAC**	10. *Rumex crispus*	**H**	**FACW-**
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Occurs along bottom of slight depression.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
_√_ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **>18"** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ____ Inundated
  ____ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **No visible surface indicators, and ground water deeper than 18" on 2/9/94.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16'		**10 YR 4/1**	**7.5 YR 3/4**	**Few, Prom**	**Clay loam**
			10 YR 4/2	**Common, Prom**	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aqueous Moisture Regime
- ___ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **No**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Although the soils indicate wetlands, the vegetation indicators are marginal at best and there were no hydrologic indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/25/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Q2**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Cyperus eragrostis*	**H**	**FACW**	9. *Salicornia pacifica*	**H**	**OBL**
2.			10. *Polypogon monspeliensis*	**H**	**OBL**
3.			11. *Lolium perenne*	**H**	**FAC**
4.			12. *Frankenia grandifolia*	**H**	**FACW+**
5.			13. *Hordeum hystrix*	**H**	**FAC**
6.			14. *Rumex crispus*	**H**	**FACW-**
7.			15. *Plantago coronopus*	**H**	**FAC**
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **All the plants species are wetland indicators.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Algae draped from sedge 6" above ground, indicating deep standing water.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10"	**A**	**10 YR 5/8**			**S. Clay loam**

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aqueous Moisture Regime
___ Reducing Conditions
√ Gleyed or Low-Chroma Colors

___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
√ Other (Explain in Remarks)

Remarks: **Very hard and dry; assumed aquic moisture regime in semi-closed depressional area. Appears to have impervious clay layer.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **Although soil coloration did not indicate wetlands, there were good strong vegetation and hydrologic indicators and soils have an impervous subsurface layer.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor & Larry Stromberg, Ph.D.**

Date: **7/25/93**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **Yes**
Is the site significantly disturbed (Atypical Situation)? **No**
Is the area a potential Problem Area? **No**

Community ID: ______
Transect ID: ______
Plot ID: **Q3**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Polypogon monspeliensis*	H	FACW+	9.		
2. *Cotula coronopifolia*	H	FACW+	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Plot is dominated by barren soil with scattered FACW+ species.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
  ___ Stream, Lake, or Tide Gauge
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ___ Inundated
  ___ Saturated in Upper 12 Inches
  ___ Water Marks
  ___ Drift Lines
  ___ Sediment Deposits
  ___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ___ Oxidized Root Channels in Upper 12 Inches
  ___ Water-Stained Leaves
  ___ Local Soil Survey Data
  ___ FAC-Neutral Test
  √ Other (Explain in Remarks)

Remarks: **Algal mats on soil surface.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10"		**10 YR 3/3**	**10 YR 3/2**	**Common, prom**	
			10 YR 5/8	**Common, prom**	**Clay loam**
			7.5 YR 2/0	**Few, prom**	**Assoc. w/ soft mn masses**

Hydric Soil Indicators:

___	Histosol	√	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aqueous Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
√	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Manganese concretions.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **The boundaries are easily defined between barren soils of wetland and grass covered uplands.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor & Larry Stromberg, Ph.D.**

Date: **7/25/93**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **Yes**
Is the site significantly disturbed (Atypical Situation)? **No**
Is the area a potential Problem Area? **No**

Community ID: ____
Transect ID: ____
Plot ID: **Q4**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Raphanus sativus*	**H**	**UPL**	9.		
2. *Xanthium strumarium*	**H**	**FAC+**	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)
Depth to Free Water in Pit: **N/A** (Inches)
Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ____ Inundated
  ____ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  √ Other (Explain in Remarks)

Remarks: **Heavy algal mats; alge-matted mulch.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-13"		**10 YR 4/2**	**Few, prom**	**H. clay loam**	
		7.5 YR 3/4	**Few, prom**		
		10 YR 5/8	**Few, prom**		

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- _√_ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **Although the vegetation indictors are marginal, the lateness of the season may account for the *Raphanius sativus* (wild radish). Good + indicators for hydrology and soils suggest this is a wetland.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/25/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Q5**

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Polygonum hydropiper*	**H**	**OBL**	9.	*Cotula coronopifolia*	**H**	**FACW+**
2.				10.	*Polypogon monspeliensis*	**H**	**FACW**
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks:

HYDROLOGY

✓ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ____ Other

____ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **3"** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ✓ Saturated in Upper 12 Inches
- ✓ Water Marks
- ✓ Drift Lines
- ✓ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **Pit at edge of standing water. Aerial photo in March 1992 indicates pooled water in this area. Ponded water was observed in July 1993 and again in April 1994.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8"		10 YR 2/1			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- √ Sulfidic Odor
- ___ Aqueous Moisture Regime
- ___ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/25/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Q6**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Polygonum hydropiper*	H	OBL	9. *Atriplex patula*	H	FACW
2.			10. *Polypogon monspeliensis*	H	FACW
3.			11. *Frankenia grandifolia*	H	FACW+
4.			12. *Alisma plantago-aquatic*	H	OBL
5.			13. *Cotula coronopifolia*	H	FACW+
6.			14. *Raphanus sativus*	H	NI
7.			15. *Juncus mexicanus*	H	FACW
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks:

HYDROLOGY

√ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- √ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Water-matted mulch (limited). Aerial photo of March 1992 indicates surface water.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"		**10 YR 4/1.5**	**7.5 YR 3/4**	**Few, prom**	**Clay loam**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**
Is this Sampling Point Within a Wetland?	**Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/25/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Q7**

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Raphanus sativus*	**H**	**NL**	9.	*Atriplex patula*	**H**	**FACW**
2.				10.	*Rumex crispus*	**H**	**FACW-**
3.				11.	*Lactuca serriola*	**H**	**FAC**
4.				12.	*Agrostis stolonifera*	**H**	**FACW**
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **0%**

Remarks: **Current subdominates form hydrophytic vegetation; dominants nearby in same area are FACW and OBL (same elevation w/ same algal mats). Late-season wild radish dominance site below adjacent *Typha* stand. Re-check in April and same conditions with wild radish dominance and surface water ponding.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Water-matted mulch and algal mats**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8"	**A**	**10 YR 4/1.5**	**7.5 YR 3/4**	**Few, prom**	**Clay loam**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **Although the vegetation indicators are not +, this is believed to be due to the lateness in the season. This survey was conducted and the wild radish moved into the site after it dried out. All the subdominates suggest wetlands as do hydrologic and soil indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/27/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	**Q8**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Atriplex patula*	H	FACW	9. *Lactuca serriola*	H	FAC
2. *Raphanus sativus*	H	NI	10. *Polygonum hydropiper*	H	OBL
3.			11. *Holcus lanatus*	H	FAC
4.			12. *Lolium perenne*	H	FAC
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No hydrologic indicators.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
16"		**10 YR 4/1**	**7.5 YR 3/4**		

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aqueous Moisture Regime
Reducing Conditions
√ Gleyed or Low-Chroma Colors
Concretions
High Organic Content in Surface Layer in Sandy Soils
Organic Streaking in Sandy Soils
Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**No**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**No**

Remarks: **Vegetation is transitional w/o hydrologic indicators. Positive soil indicators. Plot is on a slight rise between wetlands of plots Q6 & Q7.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/27/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Q9**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Conium maculatum*	**H**	**NI**	9. *Rumex crispus*	**H**	**FACW-**
2. *Raphanus sativus*	**H**	**NI**	10. *Sonchus oleraceus*	**H**	**NI**
3.			11. *Picris echioides*	**H**	**FAC**
4.			12. *Lactuca serriola*	**H**	**FAC**
5.			13. *Holcus lanatus*	**H**	**FAC**
6.			14. *Centaurea melitensis*	**H**	**NI**
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **0%**

Remarks:

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No hydrologic indicators.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents** Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—** Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
16"		**7.5 YR 4/1**	**5 YR 4/4**		

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aqueous Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
√	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**		
Wetland Hydrology Present?	**No**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**No**

Remarks: **Although the soils would indicate wetlands, the plot lacks any vegetative or hydrologic indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/25/93 & 3/1/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**S1**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9. *Rumex crispus*	**H**	**FACW-**
2.			10. *Lotus corniculatus*	**H**	**FAC**
3.			11. *Polypogon monspeliensis*	**H**	**FACW**
4.			12. *Hordeum leporinum*	**H**	**NI**
5.			13. *Eleocharis macrostachya*	**H**	**OBL**
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

_√_ No Recorded Data Available

Field Observations:

Depth of Surface Water: **3-4"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- _√_ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- _√_ Other (Explain in Remarks)

Remarks: **Water matted mulch and algal mats. On 3/1/94 surface water ponding was observed over a larger area than was mapped on 7/25/93 . A third check on 4/20/94 revealed algal mats throughout this larger area**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): —
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"		**10 YR 4/1**	**7.5 YR 3/4**	**Few, prom**	**Clay loam**
16+"					**Sand**

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aqueous Moisture Regime
- ___ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **Although dominant vegetation is marginal the predominance of wetland indicators (five of six dominant and subdominant species) for all the species would suggest a wetland. This plot also has good hydrologic and soil wetland indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/25/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	**S2**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	H	FAC	9. *Rumex crispus*	H	FACW-
2.			10. *Avena fatua*	H	NI
3.			11. *Bromus mollis*	H	NI
4.			12. *Centaurea melitensis*	H	NI
5.			13. *Plantago coronopus*	H	FAC
6.			14. *Picris echioides*	H	FAC
7.			15. *Hordeum leporinum*	H	NI
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: **Although the dominant plant species is a wetland indicator 50% of the time, 60% of the sub-dominant species are non-wetland Indicators. This plot differs from plot S1 in that it does not support the OBL or FACW species and has more non-wearing indicators.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No visible hydrologic indicators. This plot lacks any evidence of surface water ponding unlike plot S1. Based on the data collected at piezometer #10 (plot K2), which supports similar vegetation, the groundwater drops quickly on an average of 1.5" per day.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): **—**
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"		**10YR5/6**	**7.5YR5/8**	**Few, prom**	**Sand and sandy loam**

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: **Mottles but chroma colors are light. The soils of this plot had more sand in the upper 12" than in plot S1 in which sand was found at 16" and below.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**No**		
Hydric Soils Present?	**No**	Is this Sampling Point Within a Wetland?	**No**

Remarks: **Lacks hydrologic and soils indicators. Vegetation is marginal at best.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/25/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**T1**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Eleocharis macrostachya*	**H**	**FACW**	9. *Cyperus eragrostis*	**H**	**FACW**
2. *Plantago coronopus*	**H**	**FAC**	10. *Polypogon monspeliensis*	**H**	**OBL**
3.			11. *Frankenia grandifolia*	**H**	**FACW**
4.			12. *Distichlis spicata*	**H**	**FACW**
5.			13. *Rumex crispus*	**H**	**FACW-**
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **This plot is located in a deep depression with steep banks. It appears to have been created as there is a mound of dirt right next to the pond. There is an obvious shift in vegetation between the wetland indicator species noted above and the surrounding uplands.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **24-36"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Algae crust; water-matted veg. Water ponding, 2-3' deep, on 4/20/94.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8		**10YR4/2**	**10YR4/3**	**Common, Faint**	
			7.5YR4/2	**Few, Prom**	

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**
Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **Deep depression with obvious margins. Delineating upland & wetland areas.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**7/25/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**T2**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Agrostis stolonifera*	**H**	**FACW**	9. *Rumex crispus*	**H**	**FACW-**
2.			10. *Polygonum hydropiper*	**H**	**OBL**
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **This plot is located in a deep depression with steep banks on three sides. The vegetation shift from wetland to upland indicators is obvious and distinct. The vegetation shift is much less distinct to the southeast where plots T4 and T3 were placed.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

_√_ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Water-matted mulch; algae. On 4/20/94, there was no surface water ponding.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"		**10YR4/2**	**7.5YR3/4**	**Few, Prom**	**L. Clay Loam**

Hydric Soil Indicators:

- ______ Histosol
- ______ Histic Epipedon
- ______ Sulfidic Odor
- ______ Aqueous Moisture Regime
- ______ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ______ Concretions
- ______ High Organic Content in Surface Layer in Sandy Soils
- ______ Organic Streaking in Sandy Soils
- ______ Listed on Local Hydric Soils List
- ______ Listed on National Hydric Soils List
- ______ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**

Wetland Hydrology Present? **Yes**

Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/31/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**T3**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Bromus mollis*	**H**	**FACU-**	9. *Cynodon dactylon*	**H**	**FAC**
2. *Lolium perenne*	**H**	**FAC**	10.		
3. *Raphanus sativus*	**H**	**NI**	11.		
4. *Lactuca serriola*	**H**	**FAC**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No indicators.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
6"		**10YR5/4**	**None**		

Hydric Soil Indicators:

______ Histosol
______ Histic Epipedon
______ Sulfidic Odor
______ Aqueous Moisture Regime
______ Reducing Conditions
______ Gleyed or Low-Chroma Colors
______ Concretions
______ High Organic Content in Surface Layer in Sandy Soils
______ Organic Streaking in Sandy Soils
______ Listed on Local Hydric Soils List
______ Listed on National Hydric Soils List
______ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**No**

Is this Sampling Point Within a Wetland? **No**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/27/93 &4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**T4**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Elymus triticoides*	**H**	**FAC+**	9. *Juncus mexicanus*	**H**	**FACW**
2.			10. *Holcus lanatus*	**H**	**FAC**
3.			11. *Lactuca serriola*	**H**	**FAC**
4.			12. *Raphanus sativus*	**H**	**NI**
5.			13. *Rumex acetocllea*	**H**	**FAC-**
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Nearly monotypic stand of Elymus with patches of Juncus, Raphanus, Lactuca and Holcus. This plot is very similar to the A plots.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **>18" on 4/20/94** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No surface hydrology indicators.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"		**10YR4/1**	**7.5YR3/4**	**Common/Prom**	**Sandy within first, 12". Clay loam below**

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aqueous Moisture Regime
- _____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soils
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:Colormetric evidence.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Positive vegetation and soils indicators but the lack of hydrologic indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	4/20/94
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor & Larry Stromberg, Ph.D.	State:	California

Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	T5

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Bromus diandrus*	H	NI	9. *Rumex crispus*	H	FACW-
2. *Avena fatua*	H	NI	10. *Raphanus Sativus*	H	NI
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 0%

Remarks: **Lacks dominant hydric vegetation.**

HYDROLOGY

___ Recorded Data (describe in remarks):

 ___ Stream, Lake, or Tide Guage

 ___ Aerial Photographs

 ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (Inches)

Depth to Free Water in Pit: ___ (Inches)

Depth to Saturated Soil: (Inches)

Wetland Hydrology Indicators:

Primary Indicators:

___ Inundated

___ Saturated in Upper 12 Inches

___ Water Marks

___ Drift Lines

___ Sediment Deposits

___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

___ Oxidized Root Channels in Upper 12 Inches

___ Water-Stained Leaves

___ Local Soil Survey Data

___ FAC-Neutral Test

√ Other (explain in remarks)

Remarks: **No evidence of surface ponding. This plot is located on slight rise above the "T" wetlands. Soil was dry in April.**

SOILS

Map Unit Name (Series and Phase): **Urban Land - orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): **–**
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8"		**7.5 YR 4/2**	**N/A**		**Fill sandy loam with pieces of tar and other debris.**

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic content in Surface Layer in Study Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soils
_____	Aqueous Moisture Regime	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low-Chroma Colors	_____	Other (explain in remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**		
Wetland Hydrology Present?	**No**		
Hydric Soils Present?	**No**	Is this Sampling Point within a Wetland?	**No**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/31/93 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**T6**

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Distichlis spicata*	**H**	**FACW**	9.	*Rumex crispus*	**H**	**FACW-**
2.	*Elymus triticoides*	**H**	**FAC+**	10.	*Alisma plantago-aquatica*	**H**	**OBL**
3.	*Eleocharis macrostachya*	**H**	**OBL**	11.	*Cyperus eragrostis*	**H**	**FACW**
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **This plot is in a depression beneath a powerline tower. The deepest area is dominated by Distichlis. There is sharp boundary of Elymus and Eleocharis, then a sharp boundary or upland species like Raphanus and Conium**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
  ___ Stream, Lake, or Tide Gauge
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **6-8"** (Inches)
Depth to Free Water in Pit: **8"** (Inches)
Depth to Saturated Soil: **0"** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  √ Inundated
  √ Saturated in Upper 12 Inches
  √ Water Marks
  ___ Drift Lines
  ___ Sediment Deposits
  ___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ___ Oxidized Root Channels in Upper 12 Inches
  ___ Water-Stained Leaves
  ___ Local Soil Survey Data
  ___ FAC-Neutral Test
  √ Other (Explain in Remarks)

Remarks: **Algal mats & water marks on tower footings indicate 6-8" deep inundation. Soils are saturated & ground water at 8" below surface.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"		**2.5 YR 3/1**	**7.5 YR 4/6**	**Rare light**	**Clay high in organic matter**

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- √ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**
Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **Defined depression beneath transmission line tower.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/31/93 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	T7

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Atriplex patula*	H	FACW	9. *Raphanus sativus*	H	NI
2. *Lolium perenne*	H	FAC	10. *Alisma plantago-aquatica*	H	OBL
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Similar to plot T6, beneath a powerline tower. Surrounded by mounded dirt creating a sharp line of vegetation shift between wetland & upland.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **3"** (Inches)

Depth to Free Water in Pit: **>18"** (Inches)

Depth to Saturated Soil: **>18"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- √ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Algal mat at bottom of depression draped on standing vegetation approximately .3". No groundwater or saturated soils in pit on 4/20/94.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"		**2.5 YR 3/1**	**7.5 YR 4/6**	**Rare/light**	**Clay high in organic matter.**

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
√ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
√ Gleyed or Low-Chroma Colors

____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **Defined depression beneath transmission line tower. (Same as T6)**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor & Larry Stromberg, Ph.D.**
Date: **8/31/93 & 4/20/94**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **Yes**
Is the site significantly disturbed (Atypical Situation)? **No**
Is the area a potential Problem Area? **No**
Community ID:
Transect ID:
Plot ID: **T8**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **This plot is similar in location to plots T6 & T7. Lolium forms a montypic stand with obvious upland boundary defined by Avena barbata and Raphanus sativus.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **0"** (Inches)
Depth to Free Water in Pit: **>18"** (Inches)
Depth to Saturated Soil: **>18"** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: **No obvious signs of surface inundation.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): **—**
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"		**2.5 YR 3/1**	**7.5 YR 4/6**	**Rare/very light**	**Sandy loam**

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aqueous Moisture Regime
Reducing Conditions
√ Gleyed or Low-Chroma Colors
Concretions
High Organic Content in Surface Layer in Sandy Soils
Organic Streaking in Sandy Soils
Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **No**
Wetland Hydrology Present? **No**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **This plot lacks strong dominance of hydric vegetation and no sign of hydrology indicators**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**T9**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Eleocharis macrostachya*	**H**	**OBL**	9. *Picris echioides*	**H**	**FAC**
2. *Cyperus eragrostis*	**H**	**OBL**	10. *Typha latifolia*	**H**	**OBL**
3.			11. *Lolium perenne*	**H**	**FAC**
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **This is a small wetland area that ponds during winter and sometimes in spring. Of the five dominant and subdominant plant species, three are OBL.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Observed ponding earlier in season, however no algal mats on ground surface.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Soil sample was not taken because dominant plants are OBL.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **NA**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **The vegetation is a strong indicator of wetland even without complete hydrologic evidence.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/31/93 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**T10**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Distichlis spicata*	H	FACW	9. *Juncus mexicanus*	H	FACW
2. *Frankenia grandifolia*	H	FACW	10.		
3. *Lolium perenne*	H	FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **A deep depression underneath a powerline tower. Sharp topographic gradient allows for easy delineation between upland and wetland vegetation**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **18-24"** (Inches)

Depth to Free Water in Pit: **16"** (Inches)

Depth to Saturated Soil: **6"** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ____ Inundated
  √ Saturated in Upper 12 Inches
  √ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **Positive wetland evidence in the form of water marks on vegetation, groundwater was within 16" of the surface on 4/20 and the soils within 6" of surface were saturated.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"		**2.5 YR 3/1**	**4.2 YR 4/6**	**Rare/light**	**Clay high in organic matter**

Hydric Soil Indicators:

______ Histosol
______ Histic Epipedon
______ Sulfidic Odor
______ Aqueous Moisture Regime
______ Reducing Conditions
√ Gleyed or Low-Chroma Colors

______ Concretions
______ High Organic Content in Surface Layer in Sandy Soils
______ Organic Streaking in Sandy Soils
______ Listed on Local Hydric Soils List
______ Listed on National Hydric Soils List
______ Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Defined depression beneath transmission line tower.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	**T11**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Distichlis spicata*	**H**	**FACW**	9. *Cyperus eragrostis*	**H**	**FACW**
2. *Rumex crispus*	**H**	**FACW-**	10. *Atriplex patula*	**H**	**FACW**
3. *Lolium perenne*	**H**	**FAC**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Similiar to plot T10.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
  ___ Stream, Lake, or Tide Gauge
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **1-2"** (Inches)

Depth to Free Water in Pit: **>18"** (Inches)

Depth to Saturated Soil: **16"** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  √ Inundated
  ___ Saturated in Upper 12 Inches
  √ Water Marks
  ___ Drift Lines
  ___ Sediment Deposits
  ___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  √ Oxidized Root Channels in Upper 12 Inches
  ___ Water-Stained Leaves
  ___ Local Soil Survey Data
  ___ FAC-Neutral Test
  √ Other (Explain in Remarks)

Remarks: **Algal mats, water marks on standing vegetation as evidence of 1-2" inundation.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"		**2.5 YR 3/1**	**7.5 YR 4/6**	**Rare/light**	**Clay high in organic matter**

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
√ Gleyed or Low-Chroma Colors
____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **See T6.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/4/93 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	V1

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Raphanus sativus*	H	NI	9.		
2. *Rumex crispus*	H	FACW-	10.		
3. *Epilobium ciliatum*	H	FACW	11.		
4. *Atriplex patula*	H	FACW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **75%**

Remarks: **This plot is located on the edge of a shift in vegetation dominance. Raphanus dominates up topographic gradient, Rumex & Epilobium dominate down topographic gradient.**

HYDROLOGY

___ Recorded Data (Describe in Remarks):
  ___ Stream, Lake, or Tide Gauge
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **11-18"** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ___ Inundated
  ___ Saturated in Upper 12 Inches
  ___ Water Marks
  ___ Drift Lines
  ___ Sediment Deposits
  ___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ___ Oxidized Root Channels in Upper 12 Inches
  ___ Water-Stained Leaves
  ___ Local Soil Survey Data
  ___ FAC-Neutral Test
  ___ Other (Explain in Remarks)

Remarks: **No visible evidence of ponding water on surface. In area dominated by Raphanus groundwater is >18" deep, and 11" deep in area dominated by Epilobium and Rumex.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10"	**A**	**10 YR 3/2**	**7.5YR3/4**	**Common Prom**	**Clay Loam**
0-10"	**A**		**10 YR 3/1**	**Few Fine**	

Hydric Soil Indicators:

____ Histosol

____ Histic Epipedon

____ Sulfidic Odor

____ Aqueous Moisture Regime

____ Reducing Conditions

√ Gleyed or Low-Chroma Colors

____ Concretions

____ High Organic Content in Surface Layer in Sandy Soils

____ Organic Streaking in Sandy Soils

____ Listed on Local Hydric Soils List

____ Listed on National Hydric Soils List

____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**

Wetland Hydrology Present? **Yes**

Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Although there was no surface hydrologic indicators, the subsurface groundwater levels measured on 4/20/94 indicate that the areas down the topographic gradient have hydrologic indicators and areas up topographic gradient are on the boundary. Vegetation and soils indicators are strong wetland indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	8/4/93 & 4/20/94
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor & Larry Stromberg, Ph.D.	State:	California
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	V2

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Eleocharis macrostachya*	H	OBL	9. *Holcus lanatus*	H	FAC
2.			10. *Raphanus sativus*	H	NI
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: 12-24" (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: Algae mats and algae-matted thatch. On 4/20/94, this area had ponded water.

SOILS

Map Unit Name
(Series and Phase): Urban land – orthents

Drainage Class: 0-2% slopes

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? Yes

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-11"	A	10 YR 3/2	7.5 YR 3/4	Few, Prom	Clay Loam

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aqueous Moisture Regime
Reducing Conditions
√ Gleyed or Low-Chroma Colors

Concretions
High Organic Content in Surface Layer in Sandy Soils
Organic Streaking in Sandy Soils
Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? Yes
Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/4/93 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V3**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Eleocharis macrostachya*	**H**	**OBL**	9. *Raphanus sativus*	**H**	**NI**
2. *Polygonum hydropiper*	**H**	**OBL**	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks:

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **12-24"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Algae mat. This plot had ponded water on 4/20/94.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"	**A**	**10 YR 3/2**	**2.5 YR 3/4**	**Common Prom**	**Loam to Clay Loam**

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
√ Gleyed or Low-Chroma Colors

____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/4/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V4**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Eleocharis macrostaycha*	H	OBL	9. *Rumex crispus*	H	FACW-
2.			10. *Raphanus sativus*	H	NI
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Virtually 100% cover of *Eleocharis* thatch.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
  ___ Stream, Lake, or Tide Gauge
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**12-24"**	(Inches)
Depth to Free Water in Pit:	**N/A**	(Inches)
Depth to Saturated Soil:	**N/A**	(Inches)

Wetland Hydrology Indicators:
Primary Indicators:
- √ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Algae mats (stlll green below heavy thatch). This plot is located within the same pond in which plots V2 & V3 occur.**

SOILS

Map Unit Name (Series and Phase): Urban land – orthents
Drainage Class: 0-2% slopes
Taxonomy (Subgroup): —
Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"	A	10 YR 3/4	7.5 YR 3/4	Common Prom	Clay Loam
			2.5 YR 3/4	Few Prom	
			10 YR 3/1	Few Indistinct	

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
√ Reducing Conditions
_____ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? Yes
Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Although the soil is light-colored, the 100% obligate vegetation with indicators of inundation would indicate wetland habitat.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/4/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V5**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Raphanus sativus*	H	NI	9. *Alisma plantago – aquaticum*	H	OBL
2. *Agrostis stolonifera*	H	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks: **This plot is located on the edge of a pond immediately to the east. Based on the presence of the OBL species, this plot may well occur within the inundation zone in some years.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
_√_ No Recorded Data Available

Field Observations:

Depth of Surface Water: **3-4"(?)** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  _√_ Inundated
  ____ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  _√_ Other (Explain in Remarks)

Remarks: **Algae mats and algae-crusted mulch, would suggest this plot was inundated at some unrecorded depth.**

SOILS

Map Unit Name
(Series and Phase): Urban land – orthents

Drainage Class: 0-2% slopes

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? Yes

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"	A	10 YR 4.5/1	2.5 YR 3/4	Common Prom	Loam

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aqueous Moisture Regime
- _____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soils
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	
Wetland Hydrology Present?	Yes	
Hydric Soils Present?	Yes	Is this Sampling Point Within a Wetland? Yes

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/4/93 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V6**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Polygonum hydropiper*	**H**	**OBL**	9. *Raphanus sativus*	**H**	**NI**
2. *Agrostis stolonifera*	**H**	**FACW**	10. *Echinocloa crusgalli*	**H**	**FACW**
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **6-10"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
√ Inundated
____ Saturated in Upper 12 Inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
____ Oxidized Root Channels in Upper 12 Inches
____ Water-Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
√ Other (Explain in Remarks)

Remarks: **Algae and sediment-crusted mulch at ground surface (limited). Upon revisiting this plot on 4/20, it was inundated.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents** Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): — Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"	A	10 YR 4/1	7.5 YR 3/4	Few, Prom	Loam

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aqueous Moisture Regime
___ Reducing Conditions
√ Gleyed or Low-Chroma Colors

___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/4/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V7**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Agrostis stolonifera*	H	FACW	9. *Rumex crispus*	H	FACW-
2.			10. *Lolium perenne*	H	FAC
3.			11. *Atriplex patula*	H	FACW
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **This plot is located on small saddle between an upland island in the middle of the larger wetland and the dredge spoils to the east. It supports wetland vegetation indicators.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **?** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Limited algae mats beneath heavy thatch of *Agrostis*. The algae mats suggest some level of inundation for an extended period of the time.**

SOILS

Map Unit Name (Series and Phase): Urban land – orthents

Drainage Class: 0-2% slopes

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"	A	10 YR 4/1	7.5 YR 3/4	Few, Fine, Prom	Clay Loam
			10 YR 3/2	Few, Large, Indistinct	

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: This plot is located on the edge of the ponding area immediately to the northwest and southwest.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/4/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V8**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Holcus lanatus*	**H**	**FAC**	9. *Rumex crispus*	**H**	**FACW-**
2. *Atriplex patula*	**H**	**FACW**	10. *Picris echioides*	**H**	**FAC**
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks:

HYDROLOGY

___ Recorded Data (Describe In Remarks):
    ___ Stream, Lake, or Tide Gauge
    ___ Aerial Photographs
    ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Algae crust, water-matted mulch. Soils were moist but not saturated.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-14"	**A**	**10 YR 4/1**	**2.5 YR 3/6**		**LA. Clay Loam to Loam**

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aqueous Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
____	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes		
Wetland Hydrology Present?	Yes		
Hydric Soils Present?	Yes	Is this Sampling Point Within a Wetland?	Yes

Remarks: **This plot was placed at the bottom of a ditch or drainage channel leading to a culvert. The invert of the culvert was higher than much of the area drained by the ditch as evidenced by the ponding observed in plots V2, V3, V6 , V5, & V4.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/4/93 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V9**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	H	FAC	9. *Raphanus sativus*	H	NI
2. *Holcus lanatus*	H	FAC	10. *Rumex crispus*	H	FACW-
3.			11. *Rumex acetosella*	H	FAC-
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **This vegetation would suggest a transitional wetland area.**

HYDROLOGY

____ Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **12"** (Inches)

Depth to Saturated Soil: **8"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No visible evidence of surface H_20; groundwater was within 12" of surface on 4/20/94.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"	**A**	**10 YR 4/2**	**N/A**		

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Only color other than matrix is associated with organic matter.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Vegetation indicators are marginal in spite of the positive soil and hydrology indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	8/4/93 & 4/20/94
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor & Larry Stromberg, Ph.D.	State:	California
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	V10

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Raphanus sativus*	H	NI	9. *Polygonum hydropiper*	H	OBL
2. *Agrostis stolonifera*	H	FACW	10. *Rumex crispus*	H	FACW-
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: **This plot is located just down topographic gradient of plot V9 and has more vegetation wetland indicators.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
____ Inundated
____ Saturated in Upper 12 Inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
____ Oxidized Root Channels in Upper 12 Inches
____ Water-Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
√ Other (Explain in Remarks)

Remarks: **Algae crusts; evidence of standing water; grade increases to north (see V9) where evidence of standing water is absent.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-15"	**A**	**10 YR 3/4**	**7.5 YR 3/4**	**Common, Prom**	**Loam**
			10 YR 4/2	**Few, Indistinct**	

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
√ Reducing Conditions
_____ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Although the soils are light-colored, they do have mottles and the plot has positive vegetation and hydrology indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V11**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Typha latifolia*	**H**	**OBL**	9. *Raphanus sativus*	**H**	**NI**
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks:

HYDROLOGY

___ Recorded Data (Describe In Remarks):
  ___ Stream, Lake, or Tide Gauge
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)
Depth to Free Water in Pit: **N/A** (Inches)
Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ___ Inundated
  ___ Saturated in Upper 12 Inches
  ___ Water Marks
  ___ Drift Lines
  √ Sediment Deposits
  ___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ___ Oxidized Root Channels in Upper 12 Inches
  ___ Water-Stained Leaves
  ___ Local Soil Survey Data
  ___ FAC-Neutral Test
  √ Other (Explain in Remarks)

Remarks: **Sediment-crusted mulch and algae mats.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"	**A**	**10 YR 3/1**	**7.5 YR 3/4**	**Few, Prom**	**Loam**

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aqueous Moisture Regime
- Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	8/5/93
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor & Larry Stromberg, Ph.D.	State:	California
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	V12

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lotus corniculatus*	H	FAC	9. *Lactuca serriola*	H	FAC
2. *Holcus lanatus*	H	FAC	10. *Rumex crispus*	H	FACW-
3.			11. *Raphanus sativus*	H	NI
4.			12. *Sonchus oleraceus*	H	NI
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe In Remarks):
  ___ Stream, Lake, or Tide Gauge
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:
- Primary Indicators:
  - ___ Inundated
  - ___ Saturated in Upper 12 Inches
  - ___ Water Marks
  - ___ Drift Lines
  - ___ Sediment Deposits
  - ___ Drainage Patterns in Wetlands
- Secondary Indicators (2 or more required):
  - ___ Oxidized Root Channels in Upper 12 Inches
  - ___ Water-Stained Leaves
  - ___ Local Soil Survey Data
  - ___ FAC-Neutral Test
  - ___ Other (Explain in Remarks)

Remarks: No visible surface evidence of wetland hydrology. However piezometer #13 was placed in a similar location and vegetation indicators had groundwater levels that never fell below 18" in one month's time. This plot is very similar to plot V24.

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents** Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—** Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-14"		**10 YR 3/2**	**7.5 YR 3/4**	**Few, Prom**	**Clay Loam**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aqueous Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
√	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **Weak vegetation indicators without any surface hydrologic indicators suggest marginal wetland at best. Soils suggest wetlands, but soils are highly variable on this site and w/o confirming vegetation or hydrology indicators they are not necessarily indicative of a wetland.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/5/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V13**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Holcus lanatus*	H	FAC	9. *Rumex crispus*	H	FACW-
2.			10. *Lolium perenne*	H	FAC
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- √ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Heavy algae mats and sediment deposits.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"	**A**	**10 YR 4/1**	**7.5 YR 3/4**	**Few, Prom**	**H Clay Loam to Clay**

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
√ Gleyed or Low-Chroma Colors

____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Although vegetation indicators are marginal, the hydrologic and soils indicators would suggest this is a wetland.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor & Larry Stromberg, Ph.D.**

Date: ____
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **Yes**
Is the site significantly disturbed (Atypical Situation)? **No**
Is the area a potential Problem Area? **No**

Community ID: ____
Transect ID: ____
Plot ID: **V14**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Polygonum hydropiper*	H	OBL	9. *Rumex crispus*	H	FACW-
2. *Agrostis stolonifera*	H	FACW	10. *Eleocharis macrostachya*	H	OBL
3.			11. *Lolium perenne*	H	FAC
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks:

HYDROLOGY

___ Recorded Data (Describe In Remarks):
  ___ Stream, Lake, or Tide Gauge
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:
- Primary Indicators:
  - ___ Inundated
  - ___ Saturated in Upper 12 Inches
  - ___ Water Marks
  - ___ Drift Lines
  - √ Sediment Deposits
  - ___ Drainage Patterns in Wetlands
- Secondary Indicators (2 or more required):
  - ___ Oxidized Root Channels in Upper 12 Inches
  - ___ Water-Stained Leaves
  - ___ Local Soil Survey Data
  - ___ FAC-Neutral Test
  - √ Other (Explain in Remarks)

Remarks: **Sediment crusted algae mats. Silty clay loam (much heavier than overlying soils) at 3 feet.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"	**A**	**10 YR 4/1**			**L. Clay Loam**

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**

Wetland Hydrology Present? **Yes**

Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Strong vegetation and hydrologic indicators combined w/ soil low-chroma color would suggest wetland.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/5/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V15**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Agrostis stolonifera*	**H**	**FACW**	9. *Polygonum hydropiper*	**H**	**OBL**
2. *Lolium perenne*	**H**	**FAC**	10. *Rumex crispus*	**H**	**FACW-**
3.			11. *Raphanus sativus*	**H**	**NI**
4.			12. *Sonchus oleraceus*	**H**	**FAC**
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **Very heavy algae mats.**

SOILS

Map Unit Name
(Series and Phase): Urban land – orthents

Drainage Class: 0-2% slopes

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? Yes

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-14"	A	10 YR 4/1	7.5 YR 3/4	Few, Prom	Loam

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aqueous Moisture Regime
- _____ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soils
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes
Wetland Hydrology Present?	Yes
Hydric Soils Present?	Yes

Is this Sampling Point Within a Wetland? Yes

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor & Larry Stromberg, Ph.D.**

Date: **8/5/93**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **Yes**
Is the site significantly disturbed (Atypical Situation)? **No**
Is the area a potential Problem Area? **No**

Community ID: ____
Transect ID: ____
Plot ID: **V16**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*		**FAC**	9. *Bromus rigidus*	**H**	**NI**
2. *Rumex acetosella*		**FAC-**	10. *Bromus mollis*	**H**	**FACU**
3.			11. *Lotus corniculatus*	**H**	**FAC**
4.			12. *Holcus lanatus*	**H**	**FAC**
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks: **Vegetation suggests a transitional area.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No visible surface hydrologic indicators. See discussion of plot V18.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-21"		**10 YR 4/2**	**7.5 YR 3/4**	**Few**	**H. Silty Clay Loam**

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
√ Gleyed or Low-Chroma Colors

____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Extremely marginal site. However, weak vegetation indicators and no hydrologic evidence suggests this is not a wetland.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/5/93 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V17**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Bromus rigidus*	H	NI	9. *Bromus mollis*	H	FACW
2. *Rumex acetosella*	H	FAC-	10. *Plantago coronopus*	H	FAC
3.			11. *Lolium perenne*	H	FAC
4.			12. *Lotus corniculatus*	H	FAC
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **0%**

Remarks: **No hydrophytic vegetation.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
  ___ Stream, Lake, or Tide Gauge
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **>18"** (Inches)

Depth to Saturated Soil: **>18"** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ___ Inundated
  ___ Saturated in Upper 12 Inches
  ___ Water Marks
  ___ Drift Lines
  ___ Sediment Deposits
  ___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ___ Oxidized Root Channels in Upper 12 Inches
  ___ Water-Stained Leaves
  ___ Local Soil Survey Data
  ___ FAC-Neutral Test
  ___ Other (Explain in Remarks)

Remarks: **No visible surface or sub-surface hydrologic indicators. This plot was very near piezometer #17. The gruondwater at piezometer #17 never got closer than 23.5" of the ground surface.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"		**10 YR 4/2**	**7.5 YR 3/4**	**Few, Prom**	

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
__√__ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **This is a case where there are no vegetation or hydrology indicators but the soils are positive. This points out the problems of using soils as an indicator on fill sites.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	8/5/93 m& 4/20/94
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor & Larry Stromberg, Ph. D.	State:	California
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	V18

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	H	FAC	9. *Sonchus oleraceus*	H	NI
2.			10. *Rumex acetosella*	H	FAC-
3.			11. *Cirsium arvense*	H	NI
4.			12. *Lotus corniculatus*	H	FAC
5.			13. *Rumex crispus*	H	FACW-
6.			14. *Bromus mollis*	H	FACU
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 100%

Remarks:

HYDROLOGY

___ Recorded Data (describe in remarks):
  ___ Stream, Lake, or Tide Guage
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: 13" (Inches)

Depth to Saturated Soil: 0" (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
  ___ Inundated
  ___ Saturated in Upper 12 Inches
  ___ Water Marks
  ___ Drift Lines
  ___ Sediment Deposits
  ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
  √ Oxidized Root Channels in Upper 12 Inches
  ___ Water-Stained Leaves
  ___ Local Soil Survey Data
  ___ FAC-Neutral Test
  Other (explain in remarks)

Remarks: **No visible indicators at surface. Groundwater was at 18" below the surface on 4/20/94**

SOILS

Map Unit Name (Series and Phase): **Urban land - orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **–**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-15"		**10 YR 4/2**	**10 YR 4/3**	**Common, Faint**	**Clay Loam**
			7.5 YR 3/4	**Few, Prom**	
20"					**Bay mud**

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aqueous Moisture Regime
Reducing Conditions
√ Gleyed or Low-Chroma Colors
Concretions
High Organic content in Surface Layer in Study Soils
Organic Streaking in Sandy Soils
Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (explain in remarks)

Remarks: **At a location further west and upslope the soils at 30" were mottled w/ low chroma but are very course-textured (fine sandy loam) and are very permeable. Soils unlikely to push water w/in root zone.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**Yes**

Is this Sampling Point within a Wetland? **No**

Remarks: **Marginal to upland vegetation without any surface hydrologic indicators and marginal sub-surface indicators. Once again, points out how soils of this fill site can be misleading.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	8/5/93
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor & Larry Stromberg, Ph.D.	State:	California
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	V19

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Bromus mollis*	H	FACU	9.	*Avena fatua*	H	NI
2.				10.	*Bromus rigidus*	H	NI
3.				11.	*Italian thistle*	H	NI
4.				12.	*Rumex crispus*	H	FACW-
5.				13.	*Rumex acetosella*	H	FAC-
6.				14.	*Lotus corniculatus*	H	FAC
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: **Five of the dominant & sub-dominant plants are non-wetland indicators.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No hydrologic indicators.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"		**10 YR 4/2**			**Loam**

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aqueous Moisture Regime
- _____ Reducing Conditions
- _____ Gleyed or Low-Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soils
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **No**

Wetland Hydrology Present? **No**

Hydric Soils Present? **No**

Is this Sampling Point Within a Wetland? **No**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/5/93 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V21**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Rubus procerus*	S/V	FAC	9. *Picris echioides*	H	FAC
2. *Raphanus sativus*	H	NI	10. *Sonchus oleraceus*	H	NI
3. *Rumex crispus*	H	FACW-	11. *Convolvulus arvense*	H	NI
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **S/V 100% / H 50%**

Remarks: **The blackberry is moving into this plot from a large clump immediately to the west.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- √ Other (Explain in Remarks)

Remarks: **No visible evedance of surface ponding. Groundwater at 18" at lowest point of plot.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"		10 YR 4/3	10 YR 4/2	Common, Faint	Clay. Loam
			7.5 YR 3/4	Few, Prom	

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
√ Reducing Conditions
____ Gleyed or Low-Chroma Colors

____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes		
Wetland Hydrology Present?	No		
Hydric Soils Present?	Yes	Is this Sampling Point Within a Wetland?	No

Remarks: **No hydrologic indicators, marginal dominant vegetation but sub-dominants indicate upland. Transitional wetland at best.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V22**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	H	FAC	9.		
2. *Bromus diandrus*	H	NI	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No surface or sub-surface hydrologic indicators. Top 13" of soil was completely dry.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-13		**7.5 YR 2.5/1**	**NA**		**Clay loam**

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aqueous Moisture Regime
- ___ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: **Soil is very dark but no signs of reduction occurring**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**No**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Lacks any hydrologic and soil indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/5/93 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	No	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	Yes	Transect ID:	
Is the area a potential Problem Area?	Yes	Plot ID:	V23

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Rumex acetosella*	H	FAC-	9. *Raphanus sativus*	H	NI
2. *Holcus lanatus*	H	FAC	10. *Lotus corniculatus*	H	FAC
3. *Bromus mollis*	H	NI	11. *Rumex crispus*	H	FACW-
4.			12. *Bromus diandrus*	H	NI
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 33%

Remarks: **This plot is located in a heavily disturbed area. Cycalists and dirt-bike riders had created a dirt track in this area. This may explain why there are so many weedy species**

HYDROLOGY

____ Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: >18" (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- √ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: No visible evidence of surface hydrology. Although the groundwater at piezometer #13, 36' away, never got below 16" of the surface, there was no groundwater in the 18" pit dug at this plot on 4/20/94.

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"		**10 YR 4/3**	**10 YR 4/2**	**Few, Large, Faint**	**Clay Loam**
			7.5 YR 3/4	**Few, Fine, Prom**	
16-18"		**Gleyed**			**Bay mud clay**

Hydric Soil Indicators:

☐ Histosol
☐ Histic Epipedon
☐ Sulfidic Odor
☐ Aqueous Moisture Regime
☑ Reducing Conditions
☐ Gleyed or Low-Chroma Colors

☐ Concretions
☐ High Organic Content in Surface Layer in Sandy Soils
☐ Organic Streaking in Sandy Soils
☐ Listed on Local Hydric Soils List
☐ Listed on National Hydric Soils List
☐ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes
Wetland Hydrology Present?	No
Hydric Soils Present?	Yes

Is this Sampling Point Within a Wetland? **No**

Remarks: **Not a wetland due to no hydrologic indicators and marginal vegetation indicators.This appears to be an upland island within the larger wetland.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/5/93 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V24**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Holcus lanatus*	**H**	**FAC**	9. *Lolium perenne*	**H**	**FAC**
2.			10. *Raphanus sativus*	**H**	**NI**
3.			11. *Picris echioides*	**H**	**FAC**
4.			12. *Rumex crispus*	**H**	**FACW-**
5.			13. *Sonchus oleraceus*	**H**	**NI**
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks:

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **18"** (Inches)

Depth to Saturated Soil: **16"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No visible surface hydrologic indicators. On April 20, 1994 free water in the pit was within 18" of the surface.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): —
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-17"		10 YR 4/2	7.5 YR 3/4	Few to common	Clay Loam
				Prominent	

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aqueous Moisture Regime
- √ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **No**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Vegetation and hydrologic indicators are transitional. This area may get slightly wetter than plot V23 but they are very similar.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	8/5/93
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor & Larry Stromberg, Ph.D.	State:	California
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	V25

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Raphanus sativus*	H	NI	9. *Bromus mollis*	H	FACU
2. *Lolium perenne*	H	FAC	10. *Rumex crispus*	H	FACW-
3.			11. *Lactuca serriola*	H	FAC
4.			12. *Picris echioides*	H	FAC
5.			13. *Lotus corniculatus*	H	FAC
6.			14. *Holcus lanatus*	H	FAC
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: No visible evidence of surface hydrologic indicators.

SOILS

Map Unit Name (Series and Phase): Urban land – orthents

Drainage Class: 0-2% slopes

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"		10 YR 4/1.5	7.5 YR 3/4	Common, Fine, Prom	L. Clay Loam
				Common, Fine, Prom	L. Clay Loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
√ Reducing Conditions
√ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? No
Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? No

Remarks: Same as V16.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V26**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Bromus diandrus*	H	NI	9. *Lolium perenne*	H	FAC
2. *Rumex crispus*	H	FAC	10. *Rumex crispus*		FACW-
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks: **Downgradient is dominated by Holcus lanatus. Upgradient dominated by Bromus. Upland upslope, wetland downslope.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **18"** (Inches)

Depth to Saturated Soil: **10"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- √ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Freewater in pit at 18".**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? Yes

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"		10 YR 4/2			

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- √ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? Yes
Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes/No

Remarks: **This plot is located on the boundary of the wetlands of plots V9 & V10 and the upland north of this plot.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	4/20/94
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor	State:	California

Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	V27

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolilum perenne*	H	FAC	9. *Holcus lanatus*	H	FAC
2.			10. *Rumex crispus*	H	FACW-
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: **This is right next to the blackberries which appear to rise in elevation up an embankment.**

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: 14" (Inches)

Depth to Saturated Soil: 10" (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- √ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- √ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"		**10 YR 4/2**			

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	4/20/94
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor	State:	California
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	V28

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Holcus lanatus*	H	FAC	9. *Raphanus sativus*	H	NI
2. *Rumex acetocella*	H	FAC-	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: 18" (Inches)

Depth to Saturated Soil: 17" (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ____ Inundated
  ____ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **This plot was placed on the wetland margin based on the groundwater level. All the Holcus is within the wetland even though it occurs upgradient–a short distance. Upgradient areas were within 18" earlier in season.**

SOILS

Map Unit Name (Series and Phase): Urban land – orthents

Drainage Class: 0-2% slopes

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"		10 YR 4/3	10 YR 4/2	Common/Faint	Clay loam
			7.5 YR 3/4	Few/Prom	

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aqueous Moisture Regime
[✓ Reducing Conditions]
Gleyed or Low-Chroma Colors
Concretions
High Organic Content in Surface Layer in Sandy Soils
Organic Streaking in Sandy Soils
Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? No
Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? No

Remarks: The vegetation is transitional with two of three dominant and sub-dominant plant species being non-wetland indicators. Hydrologic indicators are marginal.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	4/20/94
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor	State:	California

Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	V29

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Bromus diandrus*	H	NI	9. *Avena fatua*	H	NI
2. *Holcus lanatus*	H	FAC	10.		
3. *Rumex acetosella*	H	FAC-	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **33%**

Remarks: **Bromus diandrus dominant upgradient; Holcus lanatus downgradient.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **>18"** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No evidence of surface inundation. No sub-surface evidence.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"		**10 YR 4/3**	**10 YR 4/2**	**Common/faint**	**Loam-clay**
			7.5 YR 3/4	**Few/Prom.**	
≥18"					**Bay mud**

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aqueous Moisture Regime
___ Reducing Conditions
√ Gleyed or Low-Chroma Colors

___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V30**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Bromus diandrus*	**H**	**NI**	9. *Lolium perenne*	**H**	**FAC**
2. *Rumex acetocella*	**H**	**FAC-**	10. *Raphanus sativus*	**H**	**NI**
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **0%**

Remarks: **Located just upgradient of piezometer #14. Dominated by upland species.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **>18"** (Inches)

Depth to Saturated Soil: **>18"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No hydrologic indicators.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"		**10 YR 4/3**	**10 YR 4/2**	**Common/Faint**	**Loam-Clay**
			7.5 YR 3/4	**Few/Prom.**	
>18"					**Bay mud**

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aqueous Moisture Regime
- _√_ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **No**

Wetland Hydrology Present? **No**

Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V31**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Polygonium hydropiper*	**H**	**OBL**	9.		
2. *Atriplex patula*	**H**	**FACW**	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks:

HYDROLOGY

___ Recorded Data (Describe In Remarks):
  ___ Stream, Lake, or Tide Gauge
  ___ Aerial Photographs
  ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **3"** (Inches)

Depth to Free Water in Pit: **11"** (Inches)

Depth to Saturated Soil: **0"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- √ Saturated in Upper 12 Inches
- ___ Water Marks
- √ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Algal mats suggest 3" deep inundation.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"		**10 YR 4/1**			**Clay-loam**

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V32**

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Polygonium hydropiper*	H	OBL	9.	*Rumex crispus*	H	FACW-
2.	*Holcus lanatus*	H	FAC	10.	*Epilobium watsonii*	H	FACW
3.	*Raphanus sativus*	H	NI	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **66%**

Remarks:

HYDROLOGY

___ Recorded Data (Describe In Remarks):
  - ___ Stream, Lake, or Tide Gauge
  - ___ Aerial Photographs
  - ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **2"** (Inches)

Depth to Free Water in Pit: **12"** (Inches)

Depth to Saturated Soil: **0"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- √ Saturated in Upper 12 Inches
- √ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Algal mats and water marks on standing vegetation.**

SOILS

Map Unit Name
(Series and Phase): Urban land – orthents
Drainage Class: 0-2% slopes

Taxonomy (Subgroup): —
Field Observations
Confirm Mapped Type? Yes

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10"		10 YR 3/2	7.5 YR 3/4	Common/Prom.	Clay loam
			10 YR 3/1	Few/Fine	

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
√ Gleyed or Low-Chroma Colors
____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? Yes
Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**V33**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Agrostis stolinifera*	H	FACW	9. *Atriplex patula*	H	FACW
2. *Lolium perenne*	H	FAC	10. *Polygonum hydropiper*	H	OBL
3.			11. *Juncus mexicanus*	H	FACW
4.			12. *Eleocharis machrostachy*	H	OBL
5.			13. *Cotula coronopifolia*	H	FACW+
6.			14. *Rumex crispus*	H	FACW-
7.			15. *Lotus corniculatus*	H	FAC
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **1"** (Inches)

Depth to Free Water in Pit: **>16"** (Inches)

Depth to Saturated Soil: **>16"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- √ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **Small area with algal mats in deepest portion of wetland.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
6-16"		**7.5 YR 4/1**	**7.5 YR 5/8**	**Common/Prom.**	**Heavy clay**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
√ Reducing Conditions
√ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	4/20/94
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor	State:	California
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	V34

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Picris echioides*	H	FAC	9. *Bromus diandrus*	H	NI
2. *Geranium carolinianum*	H	NI	10.		
3. *Raphanus sativus*	H	NI	11.		
4. *Bromus mollis*	H	NI	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 25%

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: N/A (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No hydrologic indicators.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"		**7.5 YR 6/6**	**Varied**		**Sandy clay**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**No**

Is this Sampling Point Within a Wetland? **No**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/5/93 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**WI**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Agrostis stolonifera*	**H**	**FACW**	9. *Rumex acetosella*	**H**	**FAC-**
2.			10. *Sonchus oleraceus*	**H**	**NI**
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Area is dominated by *Agrostis stolonifera* (FACW) – forming a monotypic carpet.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**3-4"**	(Inches)
Depth to Free Water in Pit:	**15"**	(Inches)
Depth to Saturated Soil:	**13"**	(Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- √ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Areas of algal mats. At the time the soil pit was dug in April the groundwater was at 15" below the surface.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-14"		**10 YR 4/2**	**7.5 YR 3/4**	**Few,Prom**	**Loam**
			7.5 YR 2/0	**Few,Prom**	

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
__√__ Reducing Conditions
_____ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/5/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**W2**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. ***Holcus lanatus***	**H**	**FAC**	9. ***Rumex acetosella***	**H**	**FAC-**
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **100%**

Remarks: ***Holcus*** **(FAC) forms a monotypic carpet.**

HYDROLOGY

____ Recorded Data (describe in remarks):
- ____ Stream, Lake, or Tide Guage
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **>18"** (Inches)

Depth to Saturated Soil: **>18"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- √ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- Other (explain in remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Urban land - orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): –

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"		**10 YR 4/2**	**7.5 YR 3/4**	**Few, Fine**	**Loam**

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aqueous Moisture Regime
- √ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic content in Surface Layer in Study Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (explain in remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	
Wetland Hydrology Present?	No	
Hydric Soils Present?	Yes	Is this Sampling Point within a Wetland? Yes

Remarks: **Although this is very similar to plot W1, it lacks as strong a vegetation indicator and had no hydrology indicators. This is a marginal or transition wetland at best.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/5/93 & 4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	W3

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Rumex crispus*	H	FACW-	9.	*Sonchus oleraceus*	H	FAC
2.	*Epilobium ciliatum*	H	FACW	10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: 18" (Inches)

Depth to Saturated Soil: 16" (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ____ Inundated
  ____ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  √ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **No other visible surface hydrologic indicators. Depth to free water in the pit dug in April was >18".**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-15"		**10 YR 4/2**	**7.5 YR 3/4**	**Few, Fine, Prom**	**Clay loam**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
√ Reducing Conditions
_____ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	
Wetland Hydrology Present?	**No**	
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland? **Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/20/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	**W4**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Rumex acetosella*	**H**	**FAC-**	9.		
2. *Lolium perenne*	**H**	**FAC**	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **>20"** (Inches)

Depth to Saturated Soil: **>20"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- √ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: No hydrologic indicators.

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-19"		5 YR 5/1	5 YR 4/6	Rare/Prom	Clay loam

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aqueous Moisture Regime
- √ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes
Wetland Hydrology Present?	No
Hydric Soils Present?	Yes

Is this Sampling Point Within a Wetland? No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/27/93 & 4/26/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**X1**

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Lolium perenne*	H	FAC	9.	*Rumex acetosella*	H	FAC-
2.	*Lotus corniculatus*	H	FAC	10.	*Holcus lanatus*	H	FAC
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **100%**

Remarks:

HYDROLOGY

☐ Recorded Data (describe in remarks):
- ☐ Stream, Lake, or Tide Guage
- ☐ Aerial Photographs
- ☐ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **6-15"** (Inches)

Depth to Saturated Soil: **6-15"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (explain in remarks)

Remarks: **No surface indicators. The groundwater was within 18" of the surface on 4/26/94 and 2/9/94.**

SOILS

Map Unit Name (Series and Phase): **Urban land - orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): –

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"		**5 YR 3/2**	**10 YR 5/6**	**Few/prom**	
			7.5 YR 3/4		

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aqueous Moisture Regime
√ Reducing Conditions
Gleyed or Low-Chroma Colors

Concretions
High Organic content in Surface Layer in Study Soils
Organic Streaking in Sandy Soils
Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (explain in remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point within a Wetland? **Yes**

Remarks: **This plot is marginal or transitional wetland. Vegetation indicators are marginal and hydrologic indicators are limited to shallow groundwater at two sample points. Soils have a low-chroma, but so do other upland plots such as X3, but there are mottles.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	8/27/93 & 4/26/94
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor	State:	California

Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	X2

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Holcus lanatus*	H	FAC	9. *Rumex crispus*	H	FACW-
2. *Lolium perenne*	H	FAC	10.		
3. *Lotus corniculatus*	H	FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 100%

Remarks: **This plot is very similar to plot X1 except it has Rumex crispus, a FACW- species. All the plants are wetland indicators, although marginal.**

HYDROLOGY

____ Recorded Data (describe in remarks):
- ____ Stream, Lake, or Tide Guage
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **6-15"** (Inches)

Depth to Saturated Soil: **6-15"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (explain in remarks)

Remarks: **No surface indicators. Groundwater in this area was less than 18" below the surface on two sampling occasions (2/9 & 4/26/94).**

SOILS

Map Unit Name (Series and Phase): **Urban land - orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): –
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"		**2.5 YR 4/1**	**10 YR 5/6**	**Few/prom**	
			7.5 YR 3/4		

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
√ Reducing Conditions
√ Gleyed or Low-Chroma Colors

____ Concretions
____ High Organic content in Surface Layer in Study Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (explain in remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes
Wetland Hydrology Present?	Yes
Hydric Soils Present?	Yes

Is this Sampling Point within a Wetland? Yes

Remarks: **Same as plot X1**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/27/93 & 4/26/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**X3**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Avena fatua*	**H**	**NI**	9. *Rumex crispus*	**H**	**FACW-**
2. *Lactuca serriola*	**H**	**FAC**	10.		
3. *Bromus diandrus*	**H**	**NI**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **33%**

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **No surface indicators. Pit dug on 4/26 had no groundwater at 18".**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"		**2.5YR4/1**	**10YR5/6**	**Few/prom**	
			7.5YR3/4		

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
√ Reducing Conditions
√ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Although soils have a low-chroma color, this plot lacks adequate vegetation or hydrologic indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**8/27/93 & 4/26/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor & Larry Stromberg, Ph.D.**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**X4**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Polygonum hydropiper*	**H**	**OBL**	9. *Lactuca serriola*	**H**	**FAC**
2. *Typha latifolia*	**H**	**OBL**	10. *Sonchus oleraceus*	**H**	**NI**
3.			11. *Atriplex patula*	**H**	**FACW**
4.			12. *Raphanus sativus*	**H**	**NI**
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Dominant plants are OBL, indicating a wetland.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **2 - 3** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
√ Inundated
√ Saturated in Upper 12 Inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
____ Oxidized Root Channels in Upper 12 Inches
____ Water-Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
√ Other (Explain in Remarks)

Remarks: **Water matted vegetation on 8/27/93. On 4/26/94 the plot was inundated with 2 - 3" of water.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
18"		**2.5YR4/1**	**7.5YR3/4**	**Few/prom**	

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- _√_ Reducing Conditions
- _√_ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Strong vegetation, hydrologic and soil indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/26/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**X5**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9.		
2. *Rumex crispus*	**H**	**FACW-**	10.		
3. *Picris echioides*	**H**	**FAC**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **In the lower portions of this wetland Juncus mexicanus, Typha latifolia, and Polygonium hydropiper, all OBL, form dominant strands.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **1 - 2** (Inches)

Depth to Free Water in Pit: **12** (Inches)

Depth to Saturated Soil: **10** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- √ Saturated in Upper 12 Inches
- √ Water Marks
- √ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **A pit dug on 4/26/94 after a couple of days of rain (0.75") had 12" to free water. In the lower portions of the wetland there were 1 - 2" of surface water. On the outer edges of the wetland, but below this plot, there were algal mats.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0 - 12"		**10YR4/1**	**N/A**		**Clay loam**

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aqueous Moisture Regime
- Reducing Conditions
- [✓ Gleyed or Low-Chroma Colors]
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**

Wetland Hydrology Present? **Yes**

Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This plot is located on the upper edge of the wetland based on the vegetation and hydrology indcators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/26/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**X6**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. ***Lolium perenne***	**H**	**FAC**	9. ***Rumex crispus***	**H**	**FACW-**
2. ***Geranium carolinianum***	**H**	**NI**	10. ***Holcus lanatus***	**H**	**FAC**
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **50%**

Remarks: **This plot is located approximately 4-6" above plot X5 at the top of a small saddle. The main vegetation change is the reduction of Rumex and addition of the Geranium.**

HYDROLOGY

____ Recorded Data (describe in remarks):
- ____ Stream, Lake, or Tide Guage
- ____ Aerial Photographs
- ____ Other

Ö No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **16-18"** (Inches)

Depth to Saturated Soil: **16"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (explain in remarks)

Remarks: **There is no sign of surface water ponding, but the plot was on the edge of the groundwater threshold level**

SOILS

Map Unit Name (Series and Phase): **Urban land - orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **–**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"		**10 YR 4/1**	**N/A**		**Clay loam**

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- Ö Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic content in Surface Layer in Study Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (explain in remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes
Wetland Hydrology Present?	Yes
Hydric Soils Present?	Yes

Is this Sampling Point within a Wetland? Yes

Remarks: **Although this plot had groundwater within 18" of the surface at the time the sample was taken, there was no evidence of surface ponding; the vegetation is marginal and the soils showed no evidence of reduction. A transitional wetland.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/26/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**X7**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. ***Bromus diandrus***	**H**	**NI**	9. ***Rumex crispus***	**H**	**FACW-**
2. ***Geranium carolinianum***	**H**	**NI**	10. ***Viscia sativa***	**H**	**NI**
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **0%**

Remarks: **This plot appears to be at or very near the same elevation as plot X6. Bromus replaces Lolium as one of the dominants.**

HYDROLOGY

___ Recorded Data (describe in remarks):
- ___ Stream, Lake, or Tide Guage
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **16-18"** (Inches)

Depth to Saturated Soil: **16"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (explain in remarks)

Remarks: **Similar to plot X6.**

SOILS

Map Unit Name (Series and Phase): **Urban land - orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): –

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"		**10 YR 4/1**	**N/A**		**Clay loam**

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aqueous Moisture Regime
Reducing Conditions
√ Gleyed or Low-Chroma Colors
Concretions
High Organic content in Surface Layer in Study Soils
Organic Streaking in Sandy Soils
Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (explain in remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point within a Wetland? **No**

Remarks: **Similar to plot X6 except vegetation lacks positive indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/26/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**X8**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Holcus lanatus*	**H**	**FAC**	9. *Lolium perenne*	**H**	**FAC**
2. *Raphanus sativus*	**H**	**NI**	10. *Rumex acetocella*	**H**	**FAC-**
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks: **This plot appears to be at or very near the same elevation as plot X7. However, the Bromus and Rumex have been replaced with Holcus lanatus and Raphanus sativus.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
    ____ Stream, Lake, or Tide Gauge
    ____ Aerial Photographs
    ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **12** (Inches)

Depth to Saturated Soil: **12** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
____ Inundated
√ Saturated in Upper 12 Inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
____ Oxidized Root Channels in Upper 12 Inches
____ Water-Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Other (Explain in Remarks)

Remarks: **Ground water was very shallow. No evidence of surface ponding.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): —
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0 - 6"		**10YR4/1**	**7.5YR5/6**	**Common/prom**	**Clay loam**
6 - 12"		**5YR6/2**	**7.5YR5/6**	**Common/prom**	**Clay**
12 - 18"		**10YR4/1**	**7.5YR5/6**	**Common/prom**	**Clay loam**

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aqueous Moisture Regime
- ✓ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: **There appear to be clay inclusions 6 - 12" deep.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Although the vegetation is marginal, there is shallow groudwater and reduced soils.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/26/94 & 4/30/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	X9

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Holcus lanatus*	H	FAC	9. *Rumex crispus*	H	FACW-
2. *Raphanus sativus*	H	NI	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **50%**

Remarks:

HYDROLOGY

___ Recorded Data (describe in remarks):
- ___ Stream, Lake, or Tide Guage
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **12"** (Inches)

Depth to Saturated Soil: **12"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- √ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (explain in remarks)

Remarks: **Similar to plot X8 except soils are not mottled. Re-visit on 4/30 with COE revealed the groundwater had dropped below 18" suggesting this plot dries out quickly.**

SOILS

Map Unit Name (Series and Phase): **Urban land - orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **–**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-14"		**10 YR 4/1**	**N/A**		

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aqueous Moisture Regime
- Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- Concretions
- High Organic content in Surface Layer in Study Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (explain in remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	
Wetland Hydrology Present?	**No**	
Hydric Soils Present?	**Yes**	Is this Sampling Point within a Wetland? **No**

Remarks: **Marginal vegetation indicators, but hydrology indicators are negative.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/26/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	**X10**

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Bromus diandrus*	H	NI	9.	*Lolium perenne*	H	FAC
2.	*Avena fatua*	H	NI	10.	*Rumex crispus*	H	FACW-
3.	*Raphanus sativus*	H	NI	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks:

HYDROLOGY

___ Recorded Data (Describe In Remarks):

___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: **No surface or subsurface indicators. No free water in 18" pit.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): **—**
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0 - 18"		**10YR4/1**	**N/A**		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aqueous Moisture Regime
- ___ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**		
Wetland Hydrology Present?	**No**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**No**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/26/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**X11**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	H	FAC	9. *Holcus lanatus*	H	FAC
2. *Rumex crispus*	H	FACW-	10. *Bromus mollis*	H	NI
3. *Rumex acetosella*			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **66%**

Remarks:

HYDROLOGY

____ Recorded Data (describe in remarks):
- ____ Stream, Lake, or Tide Guage
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **15"** (Inches)

Depth to Saturated Soil: **14"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (explain in remarks)

Remarks: **Shallow groundwater - a transitional wetland like X1 and X5, on the boundary between uplands and wetlands downslope.**

SOILS

Map Unit Name (Series and Phase): **Urban land - orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): –

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"		**10 YR 4/1**	**N/A**		

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aqueous Moisture Regime
Reducing Conditions
√ Gleyed or Low-Chroma Colors

Concretions
High Organic content in Surface Layer in Study Soils
Organic Streaking in Sandy Soils
Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (explain in remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	
Wetland Hydrology Present?	Yes	
Hydric Soils Present?	Yes	Is this Sampling Point within a Wetland? Yes

Remarks: **The vegetation and hydrology are marginal. Soils are dark, but without any signs of reduction.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor**

Date: **4/26/94**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site?	**Yes**
Is the site significantly disturbed (Atypical Situation)?	**No**
Is the area a potential Problem Area?	**No**

Community ID: ___
Transect ID: ___
Plot ID: **X12**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Agrostis stolonifera*	**H**	**FACW**	9. *Rumex crispus*	**H**	**FACW-**
2. *Polygonum hydropiper*	**H**	**OBL**	10. *Raphanus sativus*	**H**	**NI**
3. *Juncus mexicanus*	**H**	**OBL**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: 1 - 2" (Inches)

Depth to Saturated Soil: 0" (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- √ Saturated in Upper 12 Inches
- √ Water Marks
- √ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Algal mats and saturated soils to the surface.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0 - 12"		**10YR4/1**	**N/A**		

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aqueous Moisture Regime
___ Reducing Conditions
√ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks: **No mottles, but with OBL and FACW plants and saturated soils, this is a wetland.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/26/94 & 4/30/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	**X13**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	H	FAC	9. *Rumex crispus*	H	FACW-
2. *Atriplex patula*	H	FACW	10. *Lotus corniculatus*	H	FAC
3. *Bromus mollis*	H	NI	11. *Hordeum Mystrix*	H	FAC
4. *Bromus diandrus*	H	NI	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **50%**

Remarks:

HYDROLOGY

____ Recorded Data (describe in remarks):

____ Stream, Lake, or Tide Guage

____ Aerial Photographs

____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (Inches)

Depth to Free Water in Pit: 15 (Inches)

Depth to Saturated Soil: 15 (Inches)

Wetland Hydrology Indicators:

Primary Indicators:

____ Inundated

____ Saturated in Upper 12 Inches

____ Water Marks

____ Drift Lines

____ Sediment Deposits

____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

____ Oxidized Root Channels in Upper 12 Inches

____ Water-Stained Leaves

____ Local Soil Survey Data

____ FAC-Neutral Test

____ Other (explain in remarks)

Remarks: **Free water was w/in 15" of the surface on 4/26/94 but had dropped to below 18" on 4/30. Ground water was draining into adjacent wetlands.**

SOILS

Map Unit Name (Series and Phase): **Urban land - orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **–**

Field Observations Confirm Mapped Type?

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"		**5 RY 5/4 Gleyed**	**N/A**		**Clay**

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aqueous Moisture Regime
- ___ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic content in Surface Layer in Study Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (explain in remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**Yes**

Is this Sampling Point within a Wetland? **No**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/26/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**X14**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Polygonum hydropiper*	H	OBL	9. *Atriplex patula*	H	FACW
2. *Typha latifolia*	H	OBL	10. *Raphanus sativus*	H	NI
3. *Juncus mexicanus*	H	FACW	11. *Hordeum brachytherum*	H	FACW
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe In Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs ___ Other √ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: √ Inundated √ Saturated in Upper 12 Inches √ Water Marks √ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands
Field Observations: Depth of Surface Water: 1 - 2 (Inches) Depth to Free Water in Pit: N/A (Inches) Depth to Saturated Soil: N/A (Inches)	Secondary Indicators (2 or more required): ___ Oxidized Root Channels in Upper 12 Inches ___ Water-Stained Leaves ___ Local Soil Survey Data ___ FAC-Neutral Test ___ Other (Explain in Remarks)

Remarks: **Upper reaches of this plot have algal mats.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0 - 6"		**10YR4/1**	**7.5YR5/6**	**Common/prom**	**Clay loam**
6 - 12"		**5YR6/2**	**7.5YR5/6**	**Common/prom**	**Clay**
12 - 18"		**10YR4/1**	**7.5YR5/6**	**Common/prom**	**Clay loam**

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aqueous Moisture Regime
- √ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: **Similar to plot X8.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**

Wetland Hydrology Present? **Yes**

Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/26/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**X15**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Polygonum hydropiper*	**H**	**OBL**	9. *Rumex crispus*	**H**	**FACW-**
2. *Epilobium watsonii*	**H**	**OBL**	10. *Raphanus sativus*	**H**	**NI**
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
_√_ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **1 - 2** (Inches)

Depth to Saturated Soil: **0** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ____ Inundated
  _√_ Saturated in Upper 12 Inches
  _√_ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **Algal mats and saturated soils to the surface.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0 - 12"		**10YR4/1**	**N/A**		

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aqueous Moisture Regime
Reducing Conditions
√ Gleyed or Low-Chroma Colors

Concretions
High Organic Content in Surface Layer in Sandy Soils
Organic Streaking in Sandy Soils
Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (Explain in Remarks)

Remarks: **Similar to plot X8.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor**

Date: **3/1/94 & 4/15/94**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **Yes**
Is the site significantly disturbed (Atypical Situation)? **No**
Is the area a potential Problem Area? **No**

Community ID: ______
Transect ID: ______
Plot ID: **Z1**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	H	FAC	9. *Picris echioides*	H	FAC
2. *Bromus mollis*	H	NI	10. *Rumex crispus*	H	FACW-
3. *Bromus diandrus*	H	NI	11. *Vicia sativa*	H	FAC U
4. *Geranium carolinianum*	H	NI	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **25%**

Remarks: **Plot lacks dominance of hydric plant species.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **0** (Inches)
Depth to Free Water in Pit: **>18"** (Inches)
Depth to Saturated Soil: **0** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- √ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Pit dug on 3/1/94 at a depth of 18" did not have any free water. The upper 6" of the soil profile was saturated on that date as was all other plots placed in this field.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6	**A**	**2.5 YR 4/1**	**2.5 YR 5/6**	**Common/prom.**	**Loam**
6-18"	**B**				**Compacted sand**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **The soils consist of top 6" of loam that is a mottled and very dark. Beneath is a compacted sand layer. Top six inches is saturated due to compacted sand layer retarding water movement downward.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**		
Wetland Hydrology Present?	**NO**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**No**

Remarks: **This plot is locatd within 10 feet of plot 2 which had positive hydrologic indicators. The soil profile suggests a manufactured condition with six inches of top soil over an compacted sand B horizon, Plot lacks hydric vegetation of hydrology indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**3/1/94 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Z2**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9. *Hordeum leporinum,*	**H**	**NI**
2. *Bromus mollis*	**H**	**NI**	10. *Vicia sativa*	**H**	**FACU**
3. *Geranium carolinianum*	**H**	**NI**	11. *Rumex crispus*	**H**	**FACW**
4. *Bromus diandrus*	**H**	**NI**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **25%**

Remarks: **The vegetation is very similar to plot Z1 except Hordeum leporinum is added and there is a bit more Rumex in the area. This plot is approximately 10' south of plot Z1. Vegetation still lacks sufficient hydric indicators.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **0"** (Inches)

Depth to Free Water in Pit: **6"** (Inches)

Depth to Saturated Soil: **0"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
  ____ Inundated
  √ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **Pit dug on 3/1 had free water within 6" of the surface. The top 6" was saturated and appeared to be the source of the water flowing into the pit.. There was no water ponded on the surface however.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
Soils were identical to plot Z1					

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aqueous Moisture Regime
- _____ Reducing Conditions
- _____ Gleyed or Low-Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soils
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks: **Colormetric evidence.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**
Is this Sampling Point Within a Wetland?	**No**

Remarks: **Although this plot had positive hydrologic and soil indicators, the soils are manufactured and identical to plot Z1 which is not a wetland. Thus soils are not useful in delineations in this area. The plot also lacked sufficient hydric vegetation indicators, although there is a bit more Rumex than in plot Z1**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**3/1/94 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**No**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**Yes**	Transect ID:	
Is the area a potential Problem Area?	**Yes**	Plot ID:	**Z3**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9. *Bromus diandrus*	**H**	**NI**
2. *Geranium carolinianum*	**H**	**NI**	10. *Picris echioides*	**H**	**FAC**
3. *Hordeum leporinum*	**H**	**NI**	11. *Bromus mollis*	**H**	**NI**
4.			12. *Plantago lanceolata*	**H**	**FAC-**
5.			13. *Rumex crispus*	**H**	**FACW-**
6.			14. *Avena fatua*	**H**	**NI**
7.			15. *Medicago polymorpha*	**H**	**NI**
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **33%**

Remarks: **Plot lacks sufficient hydric vegetation indicators. It has a bit less Rumex than plot Z4.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **12”** (Inches)

Depth to Saturated Soil: **0”** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ____ Inundated
  √ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **Saturated soils in top 6” is due in part to soil horizon structure, or compacted sand sublayer. Depth to freewater was at 12” on 3/1 and judging from piezometer data at plot Z4 dropped to near 18” eight days later.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
6"	**A**	**2.5 YR 4/1**	**2.54 5/6**		**Loam**
76"	**B**				**Compact sand**

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **No**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Although this plot showed positive hydrology & soil indicators, it lacks sufficient vegetation indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor**
Date: **3/1/94 & 4/15/94**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **Yes**
Is the site significantly disturbed (Atypical Situation)? **No**
Is the area a potential Problem Area? **No**
Community ID: ____
Transect ID: ____
Plot ID: **Z4 (Piezometer 19)**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Geranium carolinianum*	H	NI	9. *Rumex crispus*	H	FACW-
2. *Salicornia pacifica*	H	NI	10. *Picris echioides*	H	FAC
3. *Polypogon monspeliensis*	H	FAC	11. *Platntago lanceolata*	H	FAC-
4.			12. *Epilobium watsonii*	H	FACW
5.					
6.					
7.					
8.					

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **33%**

Remarks: **Plot lacks sufficient hydric vegetation indicators.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **12"** (Inches)

Depth to Saturated Soil: **0"** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  ____ Inundated
  √ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **Water ponding on surface is limited to small depressions (1' x 1') and tire ruts. No more than 1-2" deep. Depth to free water was 12" on 3/1/94. Piezometer data indicates a drop from 12" to 18" in eight days and then to 24.5" the following nine days for an average drop of about three quarter of an inch per day.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Soils identical to plots Z1-Z3.

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**NO**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**No**

Remarks: **This plot is very similar to plot Z3, but slightly more moist as evidenced by slightly more Rumex and presence of Epilobium.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor & Larry Stromberg, Ph.D.**

Date: **3/1/94 & 4/15/94**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **Yes**
Is the site significantly disturbed (Atypical Situation)? **No**
Is the area a potential Problem Area? **No**

Community ID: ___
Transect ID: ___
Plot ID: **Z5**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Geranium carolinianum*	H	NI	*Lolium perenne*	H	FAC
2. *Bromus diandrus*	H	NI	10.		
3. *Avena fatua*	H	NI	11.		
4. *Viscia sativa*	H	NI	12.		
5.					
6.					
7.					
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **0%**

Remarks: **Lacks sufficient hydric wetland indicators.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **0"** (Inches)

Depth to Free Water in Pit: **>18"** (Inches)

Depth to Saturated Soil: **0"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- √ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Freewater was not in evidence in an 18" pit dug on 3/1/94.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Soils identical to plots Z1-Z4.

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aqueous Moisture Regime
- ___ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **No**
Wetland Hydrology Present? **No**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **Plot lacks vegeta tion and hydrology wetland indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**3/1/94 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Z6**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lotus corniculatus*	H	FAC	9. *Lythrum hyssopifolia*	H	FACW
2. *Loium perenne*	H	FAC	10.		
3. *Rumex crispus*	H	FACW-	11.		
4. *Hordeum leporinum*	H	NI	12.		
5.					
6.					
7.					
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **75%**

Remarks: **This plot is part of a larger shallow water ponded area observed on 3/1. Upon revisiting the plot plot on 4/15 , the above vegetation assemblage was limited to a much smaller area (approximately 30' x 30'). The remainder of the larger ponded area was dominated by upland grasses of Avena and Bromus.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **4"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- √ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **Water ponding observed on 3/1 surface.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
Soils identical to Z1-Z5					

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aqueous Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **A relatively small isolated seasonal wetland with a size that is dependent upon the amount of rainfall for any given year.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**4/15/93**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Z7**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Hordeum leporinum*	**H**	**NI**	9. *Juncus mexicanus*	**H**	**FACW**
2. *Atriplex patulat*	**H**	**FACW**	10. *Polypogon monspeliensis*	**H**	**FACW**
3. *Lolilum perenne*	**H**	**FAC**	11. *Lythrum hyssopifolia*	**H**	**FACW+**
4. *Plantago coronopus*	**H**	**FAC**	12. *Juncus bufonis*	**H**	**OBL**
5.			13. *Lotus corniculatus*	**H**	**FAC**
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **75%**

Remarks: **This plot is locatd in a deep depression next to the dirt access road. It has deep tire ruts running through it and may even be created by repeated vehicular traffic through the plot. Of the nine dominant and subdominant plants found in the wetland, five are FACW or OBL.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **6-12"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Ponded water observed for many weeks during winter season.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Soils identical to Z1-Z6.

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **On of the deepest and most obvious wetlands in the Z area.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor**

Date: **3/1/94 & 4/13/94**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **Yes**
Is the site significantly disturbed (Atypical Situation)? **No**
Is the area a potential Problem Area? **No**

Community ID:
Transect ID:
Plot ID: **Z8**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Hordeum brachyantherum*	**H**	**FACW**	9. *Lythrum hyssopifolia*	**H**	**OBL**
2. *Juncus bufonis*	**H**	**FACW+**	10. *Atriplex patula*	**H**	**FACW**
3. *Lolium perenne*	**H**	**FAC**	11.		
4. *Plantago coronopus*	**H**	**FAC**	12.		
5. *Lotus corniculatus*	**H**	**FAC**	13.		
6.					
7.					
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Similar to plot Z8 with 4 of 7 dominant & subdominant plants FACW or OBL.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **6-12"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  √ Inundated
  ____ Saturated in Upper 12 Inches
  ____ Water Marks
  ____ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **Ponded water observed for many weeks during winter season. (Same as Z7)**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): —
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Soils identical to plots Z1 - Z7.

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **As with plot Z7, this wetland has deep tire ruts and may even have been created by repeated traffic through this plot.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**3/1/94 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Z9**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lotus corniculatus*	H	FAC	9.		
2. *Juncus bufonis*	H	FACW+	10.		
3. *Lolium perenne*	H	FAC	11.		
4. *Hordeum brachyantherum*	H	FACW	12.		
5. *Hordeum leporinum*	H	NI	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **80%**

Remarks: **Similar to plots Z7 and Z8 with slightly less traffic disturbance.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**3-6"**	(Inches)
Depth to Free Water in Pit:	**N/A**	(Inches)
Depth to Saturated Soil:	**N/A**	(Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **Ponded water for weeks & algal mats.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): —
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		Soils identical to plots Z1 - Z9.			

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Similar to plots Z7 - Z8.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**3/1/94 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Z10**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9. *Medicago polymorpha*	**H**	**NI**
2. *Hordeum leporinum*	**H**	**NI**	10. *Rumex crispus*	**H**	**FACW-**
3. *Juncus mexicanus*	**H**	**FACW+**	11. *Lythrum hyssopifolia*	**H**	**OBL**
4. *Geranium carolinianum*	**H**	**NI**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks: **This is a very shallow wetland that ponds with water & supports wetland species mixed with upland dominates.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **1-3"** (Inches)

Depth to Free Water in Pit: ____ (Inches)

Depth to Saturated Soil: ____ (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **Algal mats. Ponded water on 3/1/94.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
Soils identical to plots Z1 - Z9.					

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**

Wetland Hydrology Present? **Yes**

Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This is a broad & elongated ponding area that has pockets of uplands intermixed (approximately 10' x 30') surface with the wetlands. Like the wetland of Z6, its size is dependent upon the amont of rainfall in any given year.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**3/1/94 & 4/13/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Z11**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	H	FAC	9. *Lythrum hyssopifolia*	H	OBL
2. *Juncus bufonis*	H	FACW+	10. *Erodium botrys*	H	NI
3. *Rumex crispus*	H	FACW-	11. *Geranium carolinianum*	H	NI
4. *Lotus corniculatus*	H	FAC	12. *Lupinus bicolor*	H	NI
5. *Cotula coronopifolia*	H	FACW+	13. *Lilaea scilloides*	H	OBL
6. *Hordeum leporinum*	H	NI	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **83%**

Remarks: **This is the largest shallow seasonal wetland found in the Z area. Like plot Z10, it has upland sites mixed in with the wetland area. Five of the eleven dominant and subdominant plant species are FACW or OBL.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **3-6"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **Algal mats, ponding 3-6".**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

<table>
<tr><th>Depth (Inches)</th><th>Horizon</th><th>Matrix Color (Munsell Moist)</th><th>Mottle Colors (Munsell Moist)</th><th>Mottle Abundance/Contrast</th><th>Texture, Concretions, Structure, etc.</th></tr>
<tr><td colspan="6">Soils identical to plots Z1 - Z10.</td></tr>
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</table>

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**
Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **This dumbell shaped seasonal wetland is approximately 225' long and 50' at its widest points. As with plots Z10 and Z6, its size in any given year is dependent upon the amount of rainfall that year.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor**

Date: **3/1/94 & 4/15/94**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **Yes**
Is the site significantly disturbed (Atypical Situation)? **No**
Is the area a potential Problem Area? **No**

Community ID: ____
Transect ID: ____
Plot ID: **Z12**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Crassula erecta*	H	FAC	9. *Lotus corniculatus*	H	FAC
2. *Hordeum leporinum*	H	NI	10. *Lythrum hyssopifolia*	H	OBL
3. *Juncus bufonis*	H	FACW+	11. *Cotula coronopifolia*	H	FACW+
4.			12. *Geranium carolinianum*	H	NI
5.			13. *Bromus mollis*	H	NI
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **66%**

Remarks: **These two depressions appear to have been created by past earth moving activites, as evidenced by the mound of earth immediately next to these depressions. Five of the eight dominant & subdominant plant taxa are wetland indcators.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **3-6"** (Inches)
Depth to Free Water in Pit: **N/A** (Inches)
Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **Ponded water (3-6") on 3/1/94 .**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents** Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): — Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
Soils identical to plots Z1 - Z11.					

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aqueous Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
√	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **These two small depressions (25' x 10' & 25' x 20') support wetland vegetation and pond water through the winter months.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**3/1/94 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Z13**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9. *Rumex crispus*	**H**	**FACW-**
2. *Lotus corniculatus*	**H**	**FAC**	10. *Erodium botrys*	**H**	**NI**
3. *Lythrum hyssopifolia*	**H**	**OBL**	11. *Juncus bufonis*	**H**	**FACW+**
4. *Geranium carolinianum*	**H**	**NI**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **75%**

Remarks: **This is an elongated (40' x 60') shallow seasonal wetland located in a flat field. Three of the seven dominant and subdominant vegetation are FACW or OBL.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **2-3"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ____ Saturated in Upper 12 Inches
- √ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **Algal mats, inundation observed on 3/1/94.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): —
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Soils are identical to plots Z1 - Z12

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aqueous Moisture Regime
- _____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soils
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **This wetland is similar to the wetland of plots Z6, Z10, & E11 in that its size in any given year is dependent upon the amount of rainfall for that year.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**3/1/94 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Z14**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Eleocharis macrosyachya*	**H**	**OBL**	9. *Rumex crispus*	**H**	**FACW-**
2. *Picris echioides*	**H**	**FAC**	10. *Lous corniculatus*	**H**	**FAC**
3.			11. *Geranium carolinianum*	**H**	**NI**
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Four of the five dominant and subdominant plant taxa are wetland indicators. One of the dominants is an OBL species.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **2-3"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Shallow ponding 2-3" on 3/1/94 but no algal mats.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
Soils are identical to plots Z1 - Z13.					

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aqueous Moisture Regime
- Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This is a small (25 ' x 40') shallow seasonal wetland next to the dirt access road. It has old tire ruts but does not appear to have had recent traffic.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**3/1/94 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Z15**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Eleocharis macrostachya*	**H**	**OBL**	9. *Rumex crispus*	**H**	**FACW-**
2. *Lolium perenne*	**H**	**FAC**	10. *Lotus corniculatus*	**H**	**FAC**
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **This site is very similar to plot Z14 but there has been recent disturbances by vehicular traffic.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **3-4"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
  √ Inundated
  ____ Saturated in Upper 12 Inches
  ____ Water Marks
  √ Drift Lines
  ____ Sediment Deposits
  ____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
  ____ Oxidized Root Channels in Upper 12 Inches
  ____ Water-Stained Leaves
  ____ Local Soil Survey Data
  ____ FAC-Neutral Test
  ____ Other (Explain in Remarks)

Remarks: **Water ponded on 3/1/94. Algal mat on 4/15/94.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Soils identical to plots Z1 - Z15.

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
__√__ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This small (30' x 10') wetland is very similar to those found at plots Z7, Z8, Z9.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**3/1/94 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Z16**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Cotula coronopifolia*	**H**	**FACW+**	9. *Eleocharis macrostachya*	**H**	**OBL**
2. *Juncus bufonis*	**H**	**FACW+**	10. *Polypogon monspeliensis*	**H**	**FAC**
3.			11. *Lolium perenne*	**H**	**FAC**
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **All the dominant and subdominant plants are wetland indicators. Three of the five are FACW or OBL.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **1-2"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Pooled water (1-3")on 3/1 but not algal mats.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		Soils identical	**to plots Z1- Z15**		

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Very hard and dry; assumed aquic moisture regime in semi-closed depressional area. Appears to have impervious clay layer.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes**
Wetland Hydrology Present? **Yes**
Hydric Soils Present? **Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This small (20' X 15") wetland is very similar to those found at plots Z7, Z8, Z9, & Z15.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**3/1/94 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Z17**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9. *Salicornia pacifica*	**H**	**OBL**
2. *Bromus diandrus*	**H**	**NI**	10. *Cotula coronopifolia*	**H**	**FACW+**
3. *Hordeum leporinum*	**H**	**NI**	11. *Lotus corniculatus*	**H**	**FAC**
4.			12. *Medicago polymorpha*	**H**	**NI**
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **33%**

Remarks: **Although two of the three dominant plant species are non-wetland indicators, the presence of the Salicornia and Cotula would suggest this area is a wetland. The non-wetland indicators are most prevalent on the margins of this wetland.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **1-3"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **Ponding in 3/1 (1-3"), no algal mats.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): **—**

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Soils are identical to plots Z1 - Z16.

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
_√_ Gleyed or Low-Chroma Colors
____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **Although the vegetation is not dominated by wetland indicators, it does contain OBL and FACW+ species which are positive indicators of a wetland in an otherwise upland area.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**3/1/94 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Z18**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	H	FAC	9. *Rumex crispus*	H	FACW-
2. *Hordem leporinumh*	H	NI	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks: **This small (20' x 15") seasonal wetland does not support any different plant species in the surrounding area that had ponded water in March.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **1-2"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **Ponding on 3/1 over a much larger area. This is one portion of the larger that had algal mats.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Soils identical to plots Z1 - Z17.

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This is but a small portion of a larger area that ponded with water. It is one of the part of the larger area that had algal mats on the surface of the ground.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor**

Date: **3/1/94 & 4/15/94**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **Yes**
Is the site significantly disturbed (Atypical Situation)? **No**
Is the area a potential Problem Area? **No**

Community ID:
Transect ID:
Plot ID: **Z19**

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Lolium perenne*	H	FAC	9.			
2.				10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **100%**

Remarks: **Similar to plot Z18. Also part of the larger ponding area.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
    ___ Stream, Lake, or Tide Gauge
    ___ Aerial Photographs
    ___ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **1-2"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
- √ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Algal mats on the ground were found scattered throughout this area (40' x 30').**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Field Observations
Confirm Mapped Type? **Yes**
Taxonomy (Subgroup): **—**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Soils identical to plots Z1 - Z18.

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aqueous Moisture Regime
- ____ Reducing Conditions
- ____ Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**
Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **This is a shallow seasonal wetland, the size of which is dependent upon the amount of rainfall that year. This wetland is part of the same ponding area of plot Z18..**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **BART SFO EXTENSION**
Application/Owner: **BART/S.F. International Airport**
Investigator: **Ric Villaseñor**

Date: **31/94 & 4/15/94**
County: **San Mateo**
State: **California**

Do Normal Circumstances exist on the site? **Yes**
Is the site significantly disturbed (Atypical Situation)? **No**
Is the area a potential Problem Area? **No**

Community ID:
Transect ID:
Plot ID: **Z20**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Juncus mexicanus*	H	FACW	9. *Plantago lanceolata*	H	FAC-
2. *Geranium carolinianum*	H	NI	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks: **This is a small area (30 X 25') within the larger upland grassland where the Juncus mexicanus has formed a nearly monotypic stand.**

HYDROLOGY

- ☐ Recorded Data (Describe In Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: **N/A** (Inches)

Depth to Free Water in Pit: **>18"** (Inches)

Depth to Saturated Soil: **0"** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: **No ponding or algal mats. No free water in the pit on 3/1/94. However, the upper 12" of soil was saturated on 3/1 but dried by 4/15.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): **—**
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Soil identical to plots Z1 - Z19.

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aqueous Moisture Regime
- ___ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: **Very hard and dry; assumed aquic moisture regime in semi-closed depressional area. Appears to have impervious clay layer.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**		
Wetland Hydrology Present?	**No**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**No**

Remarks: **Although an FACW plant is one of the dominates, this plant, Juncus mexicanus, spreads by Rhizomes and thus once established can, and often does, spread over a larger area. Given the fact that the second dominant species is a non-wetland indicator, and the third species is an FAC- suggests it is not a wetland. The hydrology indicators support the vegetation indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	31/94 & 4/15/94
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor	State:	California

Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	Z21

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Sub-Dominant Plant Species	Stratum	Indicator
1.	*Juncus bufonis*	H	FACW+	9.	*Juncus mexicanus*	H	FACW
2.	*Plantago lanceolata*	H	FAC	10.	*Lileae schilloides*	H	OBL
3.	*Vulpia bromoides*	H	FACW	11.	*Plantago coromopus*	H	FAC
4.				12.	*Rumex crispus*	H	FACW-
5.				13.	*Psilocarphus brevissimus*	H	OBL
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks: **A highly disturbed area with tire ruts & lots of bare ground. The Lileae occurs in the deepest ruts & holes.**

HYDROLOGY

☐ Recorded Data (Describe In Remarks):
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: 1-5" (Inches)

Depth to Free Water in Pit: N/A (Inches)

Depth to Saturated Soil: 0" (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ☑ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: **Ponded water on 3/1 yet no algal mats on 4/15. A small mud hole with water was in the deepest hole on 4/15.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): —
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Soil identical to plots in the area.

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aqueous Moisture Regime
- _____ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soils
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**No**
Wetland Hydrology Present?	**No**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **No**

Remarks: **This plot is located in a very disturbed area with lots of bare ground. Deep tire ruts have created conditions for water to pool and support wetland vegetation. There are three small areas (35' x 20', 45' x 15', 5' x 15") that support this vegetation.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**3/1/94 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Z22**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	**H**	**FAC**	9. *Polypogon monspeliensis*	**H**	**OBL**
2. *Eleocharis macrostachya*	**H**	**OBL**	10.		
3. *Hordeum leporinum*	**H**	**NI**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **66%**

Remarks: **This is a shallow seasonal wetland that has old tire ruts running through it . The OBL & FACW+ species occur in the bottom of the ruts while the grasses occur on the ridges created by the ruts.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **1-2"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
√ Inundated
____ Saturated in Upper 12 Inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
____ Oxidized Root Channels in Upper 12 Inches
____ Water-Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Other (Explain in Remarks)

Remarks: **Pooled water on 3/1 and slight algal mats on 4/15. Thin is part of a larger pomded area.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): **—**
Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Soils identical to plots in Z area

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aqueous Moisture Regime
_____ Reducing Conditions
√ Gleyed or Low-Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Very hard and dry; assumed aquic moisture regime in semi-closed depressional area. Appears to have impervious clay layer.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**
Wetland Hydrology Present?	**Yes**
Hydric Soils Present?	**Yes**

Is this Sampling Point Within a Wetland? **Yes**

Remarks: **This is a shallow seasonal wetland in an upland grassland. The size of the wetland (10' x 20') is dependent upon the amount of rainfall in that year.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**3/1/94 & 4/15/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**

Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Z23**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	H	FAC	9. *Rumex crispus*	H	FACW-
2. *Lotus corniculatus*	H	FAC	10.		
3. *Hordeum leporinum*	H	NI	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **66%**

Remarks: **Similar to plot Z22 only no OBL or FACW+ species.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **1-2"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- √ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Very shallow water ponding on 3/1/94. Slight algal mats on 4/15. Same conditions as plot Z22.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**

Drainage Class: **0-2% slopes**

Taxonomy (Subgroup): —

Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Soils identical to plots Z1 - Z22.

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
√ Gleyed or Low-Chroma Colors
____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**		
Wetland Hydrology Present?	**Yes**		
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland?	**Yes**

Remarks: **Same as plot Z22.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	BART SFO EXTENSION	Date:	3/1/94 & 4/15/94
Application/Owner:	BART/S.F. International Airport	County:	San Mateo
Investigator:	Ric Villaseñor & Larry Stromberg, Ph.D.	State:	California
Do Normal Circumstances exist on the site?	Yes	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID:	
Is the area a potential Problem Area?	No	Plot ID:	Z24

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Lolium perenne*	H	FAC	9. *Lythrum hyssopifolia*	H	OBL
2. *Lotus corniculatus*	H	FAC	10. *Cyperus eragrostis*	H	OBL
3. *Hordeum leporinum*	H	NI	11. *Plantago lanceolata*	H	FAC-
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks: **Although this plot is dominated by FAC species, it does support two OBL species as well.**

HYDROLOGY

____ Recorded Data (Describe In Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **2-3"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:
Primary Indicators:
- √ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: **Ponding on 3/1/94. No algal mats on 4/15/94.**

SOILS

Map Unit Name
(Series and Phase): **Urban land – orthents**
Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): —
Field Observations
Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
Soils identical to plots Z1-Z3.					

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aqueous Moisture Regime
____ Reducing Conditions
√ Gleyed or Low-Chroma Colors
____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	
Wetland Hydrology Present?	**Yes**	
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland? **Yes**

Remarks: **The presence of two OBL plant species suggests this plot stays wet long enough to have positive hydrologic indicators.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**BART SFO EXTENSION**	Date:	**3/1/94**
Application/Owner:	**BART/S.F. International Airport**	County:	**San Mateo**
Investigator:	**Ric Villaseñor**	State:	**California**
Do Normal Circumstances exist on the site?	**Yes**	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	**No**	Transect ID:	
Is the area a potential Problem Area?	**No**	Plot ID:	**Z25** (PIEZOMETER 6)

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. *Bromus mollis*	H	NI	9.		
2. *Rumex crispus*	H	FACW-	10.		
3. *Poa annua*	H	FACW-	11.		
4. *Erodium botrys*	H	NI	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). **50%**

Remarks: **This is a ponded area located between piezometers #6 & #7. It has a mixture of upland and wetland plants suggesting a transition area.**

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: **1-2"** (Inches)

Depth to Free Water in Pit: **N/A** (Inches)

Depth to Saturated Soil: **N/A** (Inches)

Wetland Hydrology Indicators:

Primary Indicators:
- √ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Although the plot had surface water on 3/1 it was gone by 4/15. The piezometers in this area indicate that the ground water can be within18" of the surface, but that it drops rapidly down to 20" or so.**

SOILS

Map Unit Name (Series and Phase): **Urban land – orthents**	Drainage Class: **0-2% slopes**
Taxonomy (Subgroup): **—**	Field Observations Confirm Mapped Type? **Yes**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		Soils identical to plots Z1 - Z24			

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aqueous Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
√	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

Remarks:

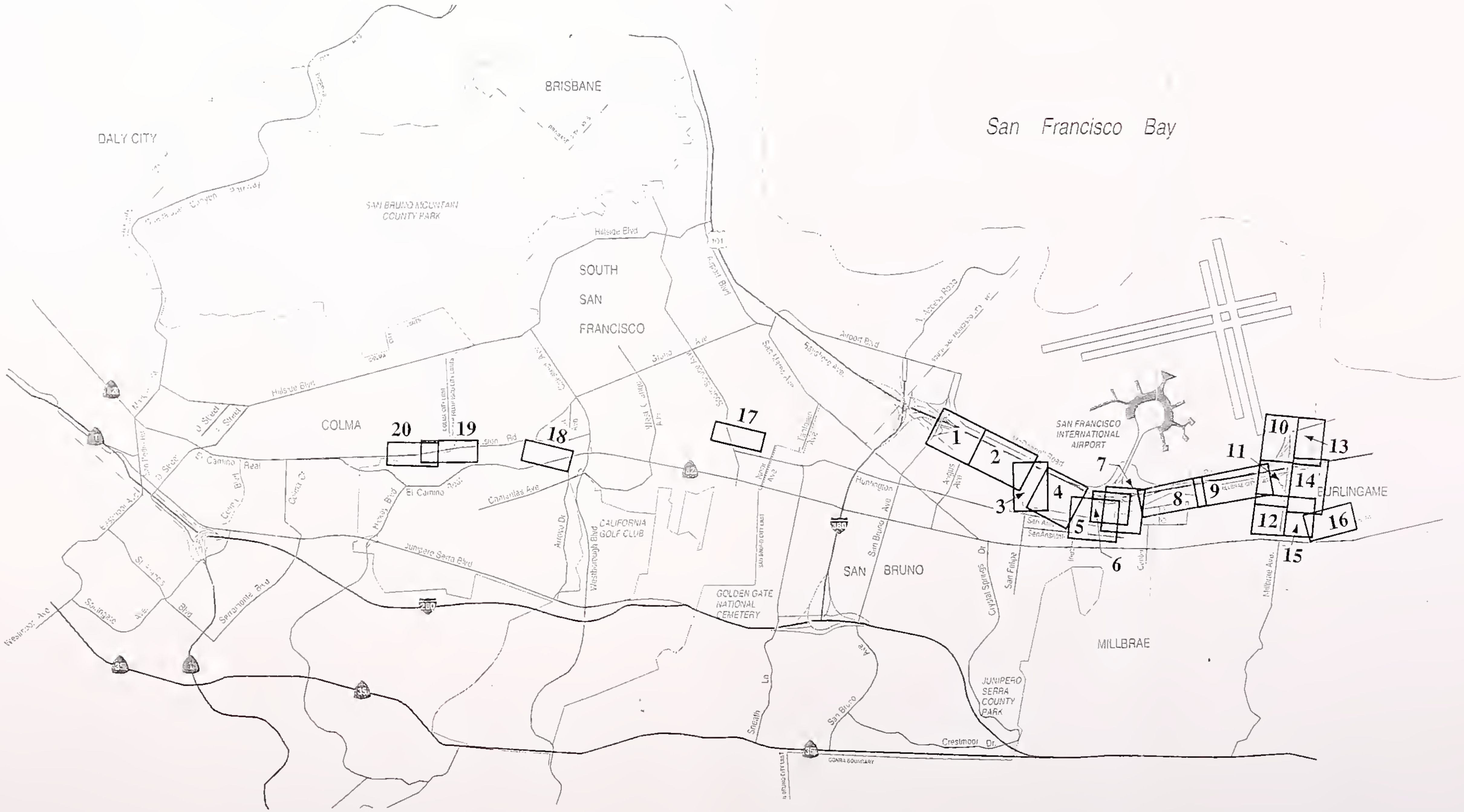
WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	
Wetland Hydrology Present?	**No**	
Hydric Soils Present?	**Yes**	Is this Sampling Point Within a Wetland? **No**

Remarks: **The plot lacks good hydrologic indicators and has marginal vegetation indicators.**

APPENDIX C

WETLAND DELINEATION MAPS

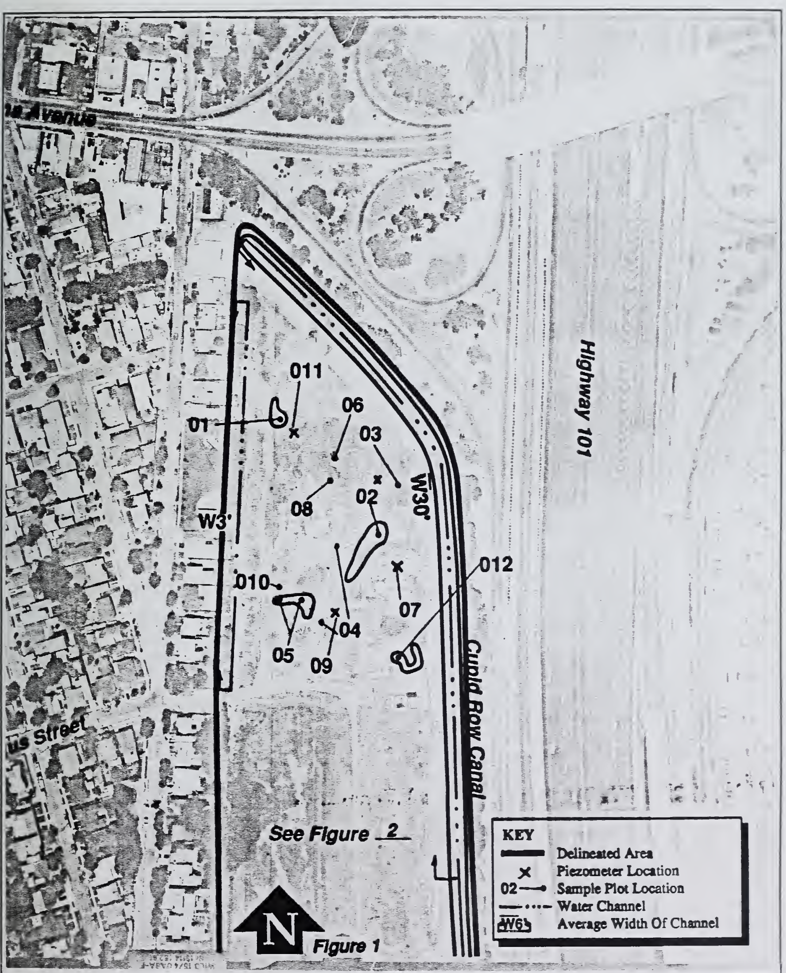


OGDEN

Wetland Delineation Reference Map

FIGURE

A

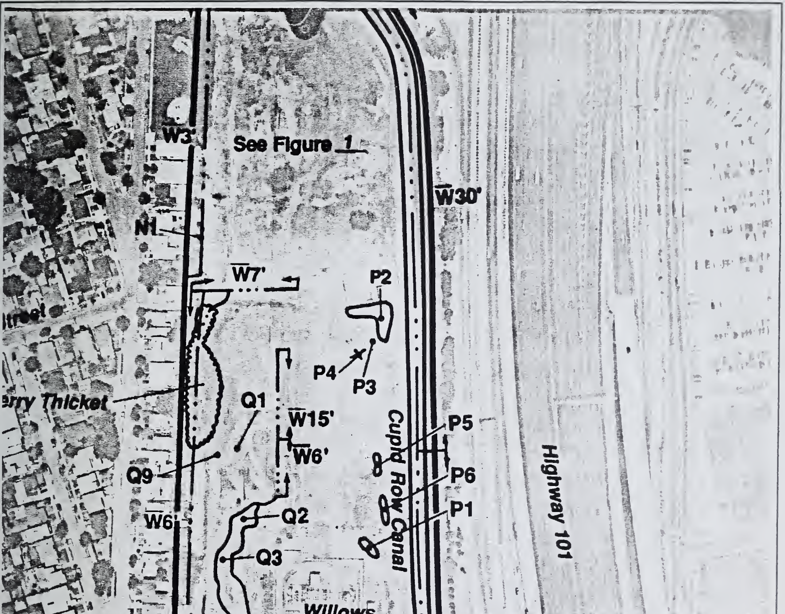


OGDEN

Wetland Delineation - SFO Property West of Highway 101

FIGURE

1

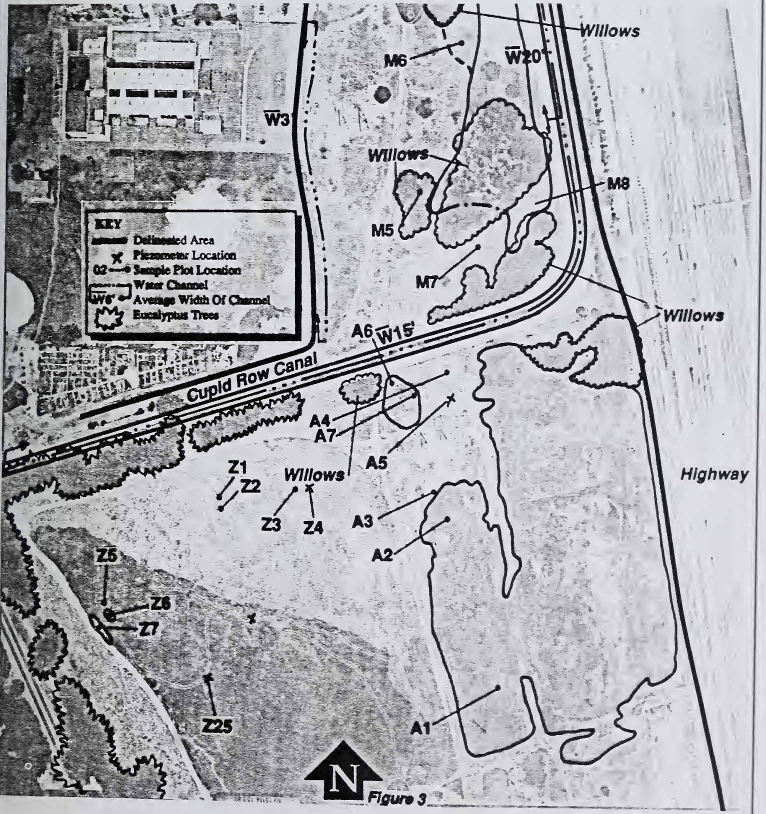


OGDEN

Wetland Delineation - SFO Property West of Highway 101

FIGURE

2

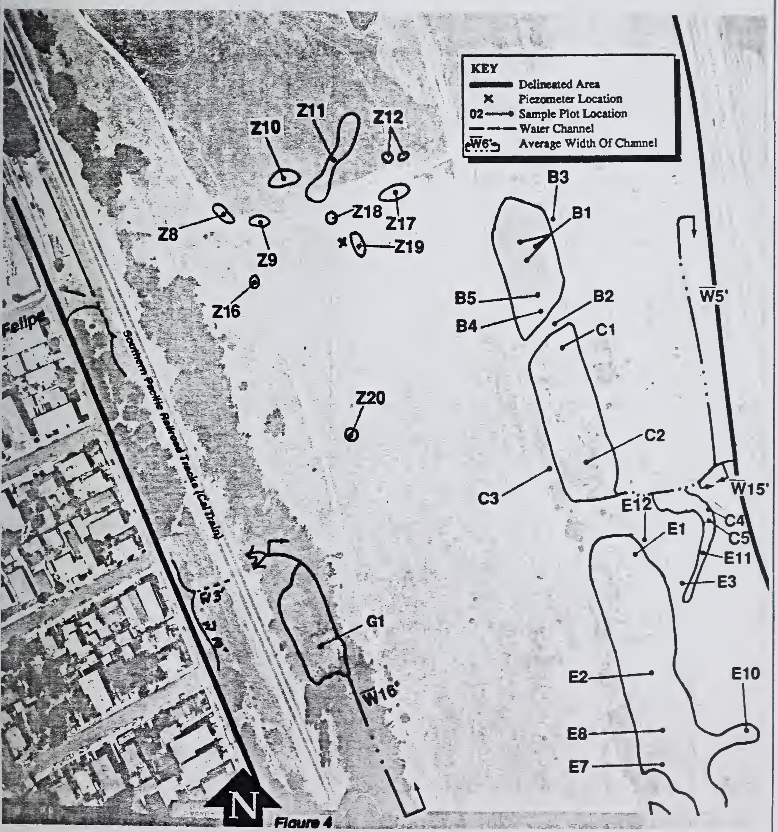


OGDEN

Wetland Delineation - SFO Property West of Highway 101

FIGURE

3



OGDEN

Wetland Delineation - SFO Property West of Highway 101

FIGURE

4

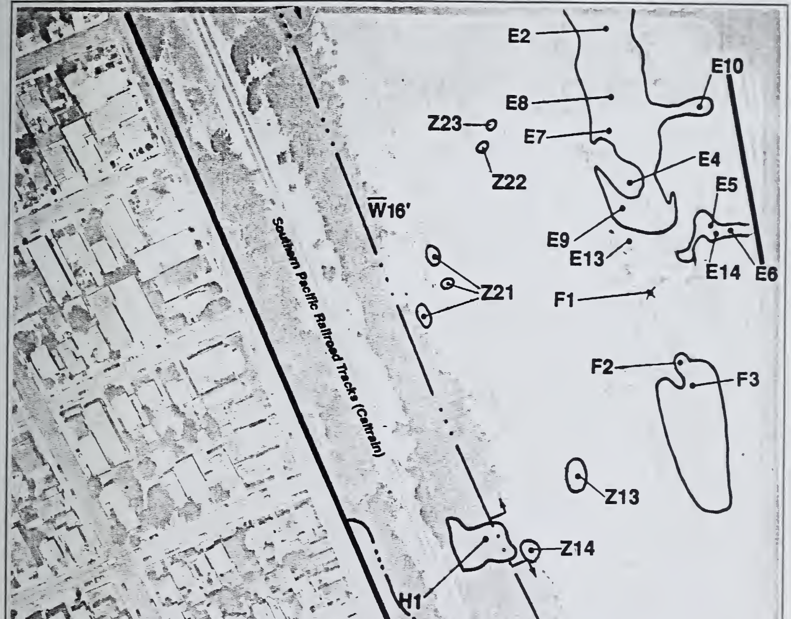


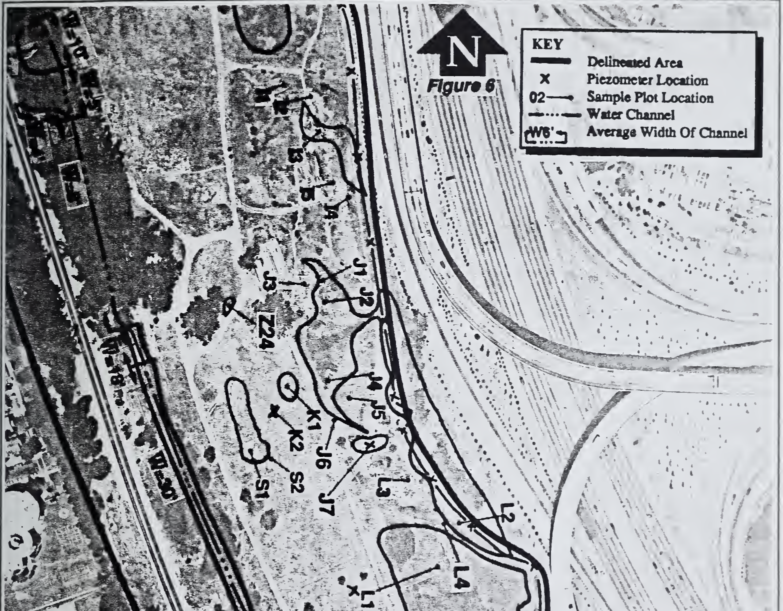
Figure 5

OGDEN

Wetland Delineation - SFO Property West of Highway 101

FIGURE

5

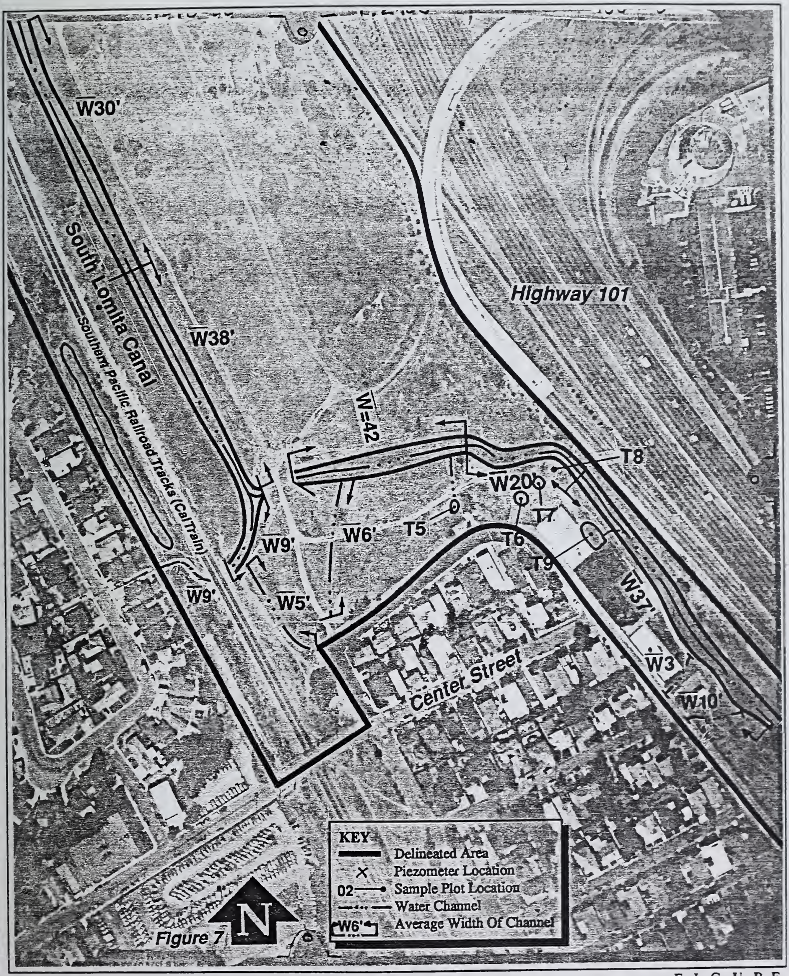


OGDEN

Wetland Delineation - SFO Property West of Highway 101

FIGURE

6

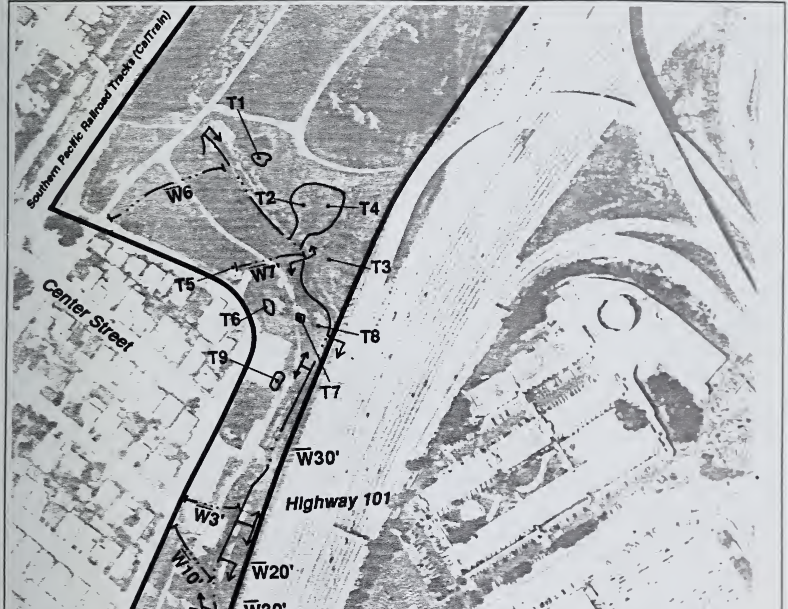


OGDEN

Wetland Delineation - SFO Property West of Highway 101

FIGURE

7

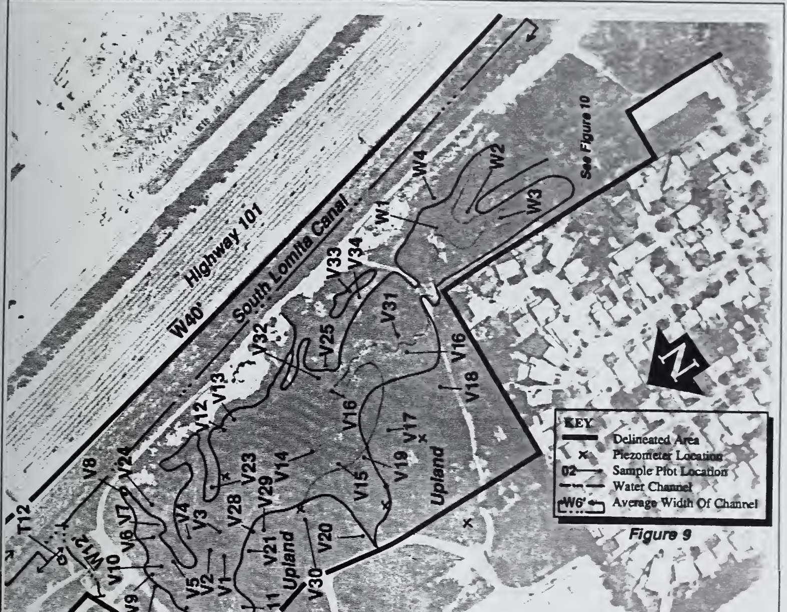


OGDEN

Wetland Delineation - SFO Property West of Highway 101

FIGURE

8

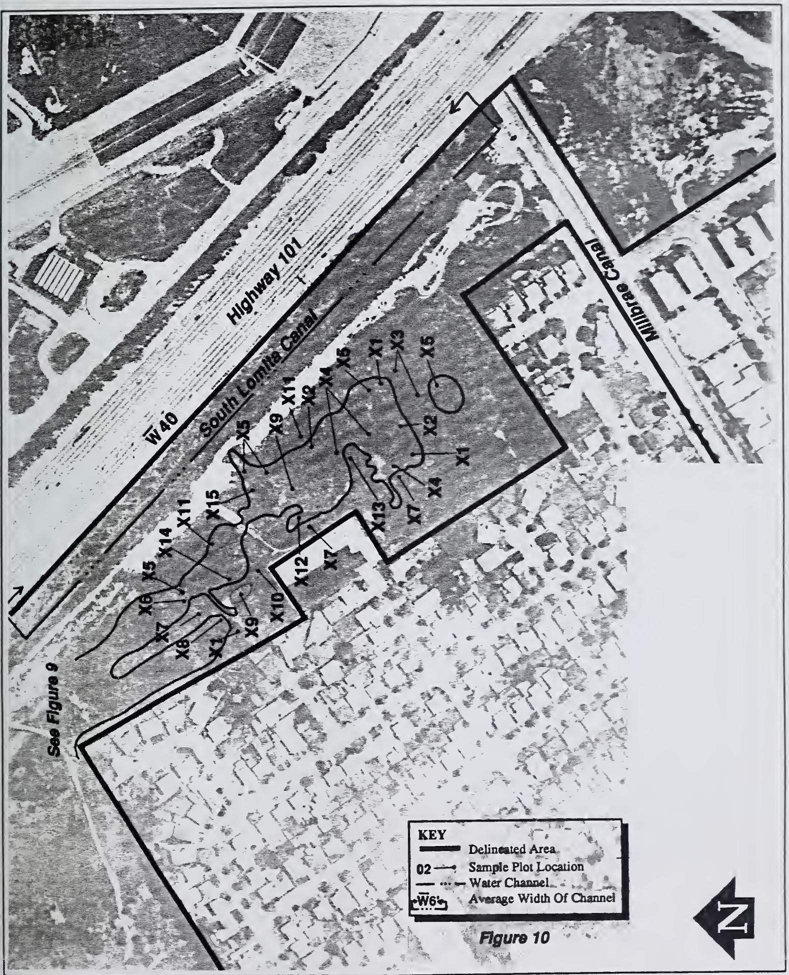


OGDEN

Wetland Delineation - SFO Property West of Highway 101

FIGURE

9

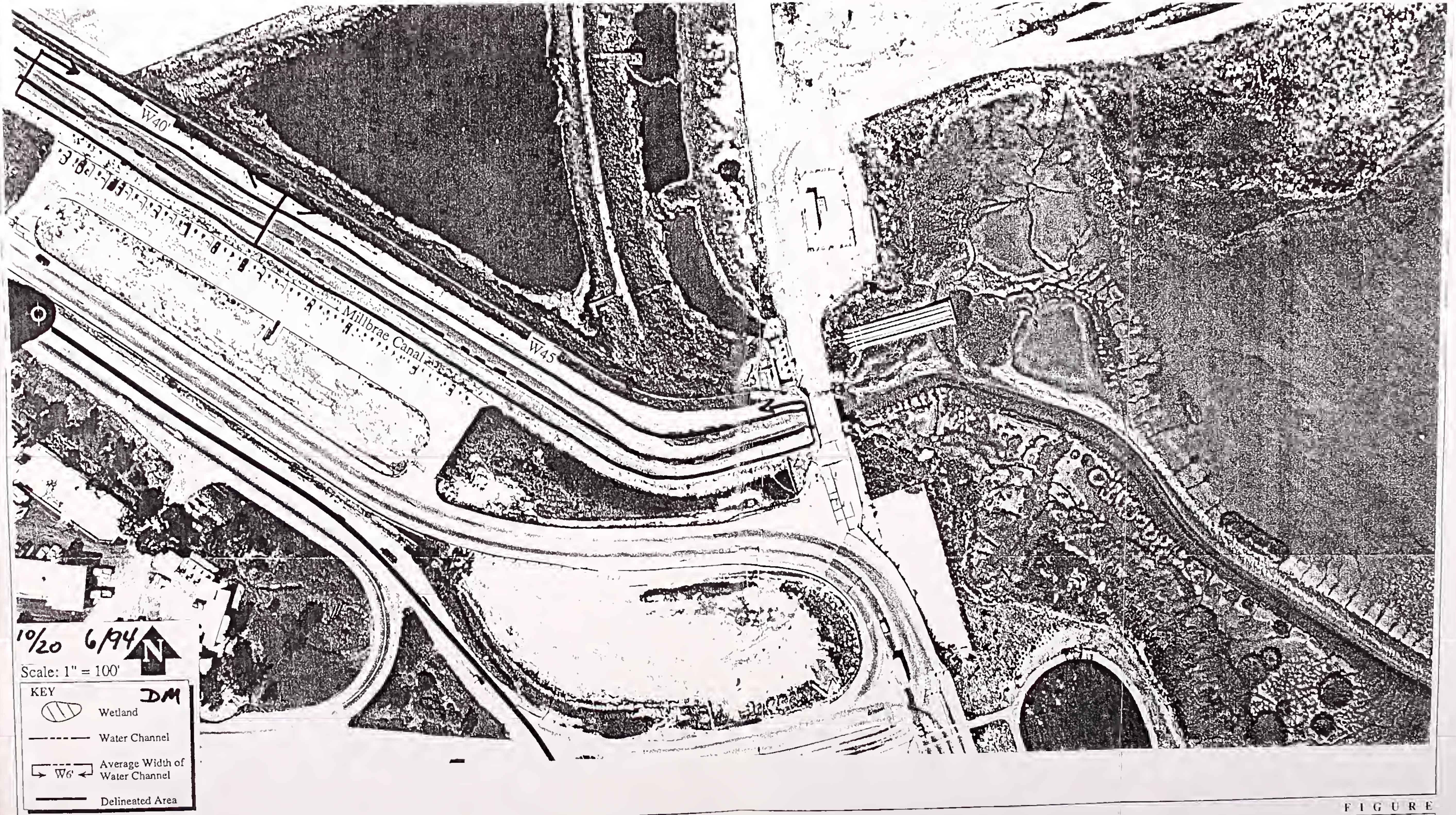


OGDEN

Wetland Delineation - SFO Property West of Highway 101

FIGURE

9a



10/20 6/94

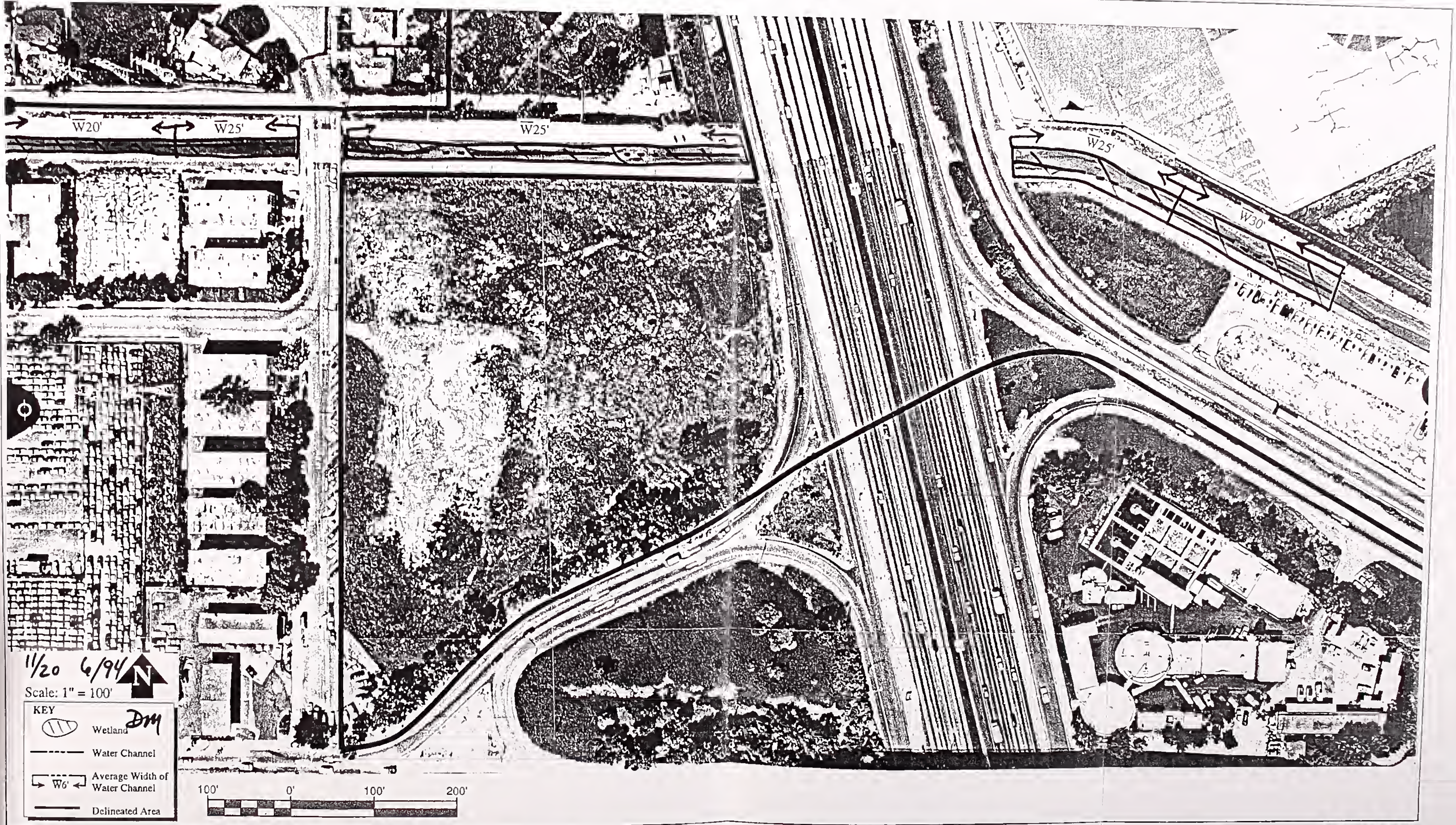
DM

OGDEN

Wetlands & Waters of U.S. on Proposed Alignment of BART Extension to S.F. Airport

FIGURE

10



OGDEN

Wetlands & Waters of U.S. on Proposed Alignment of BART Extension to S.F. Airport

FIGURE

11

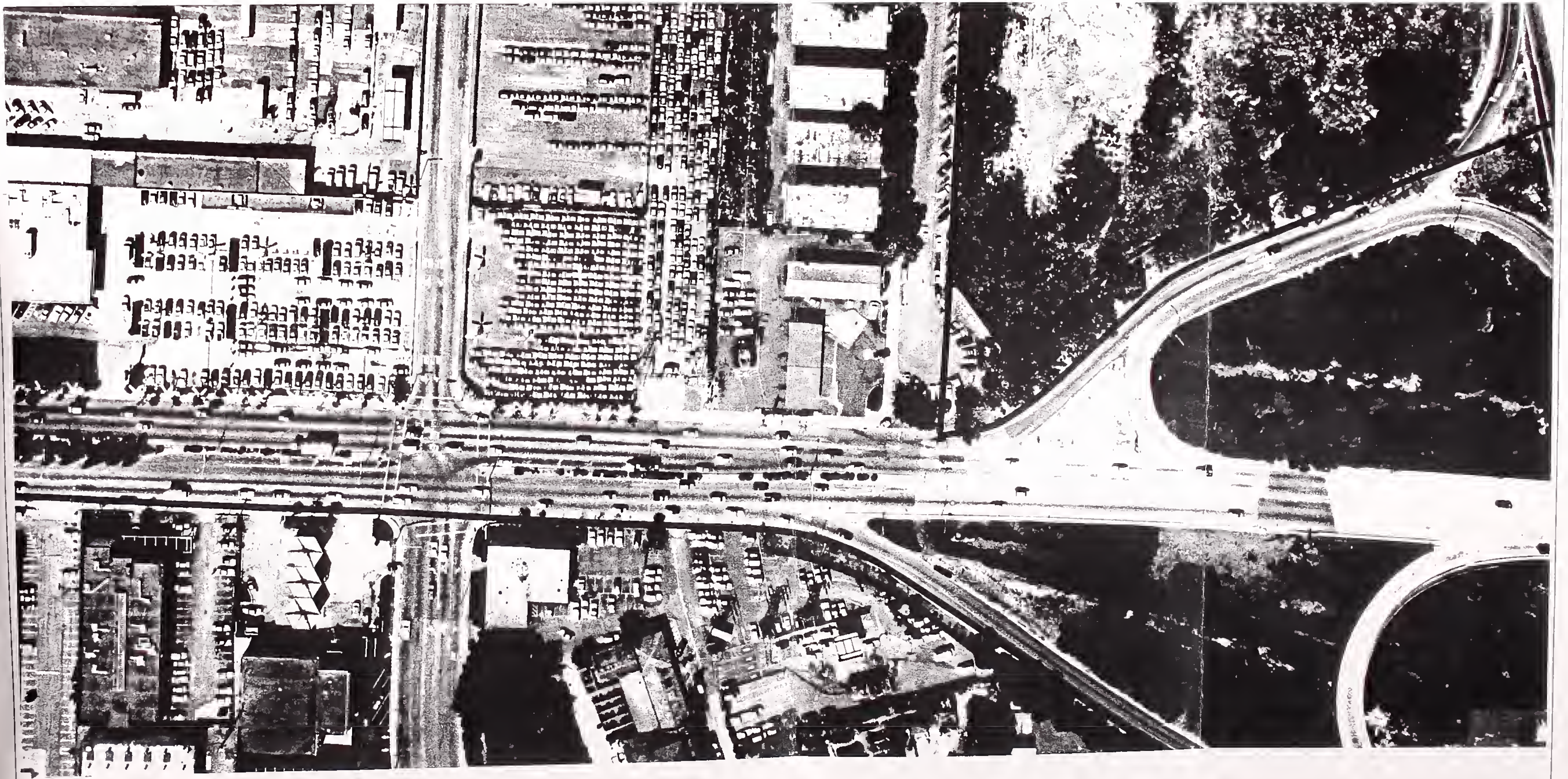
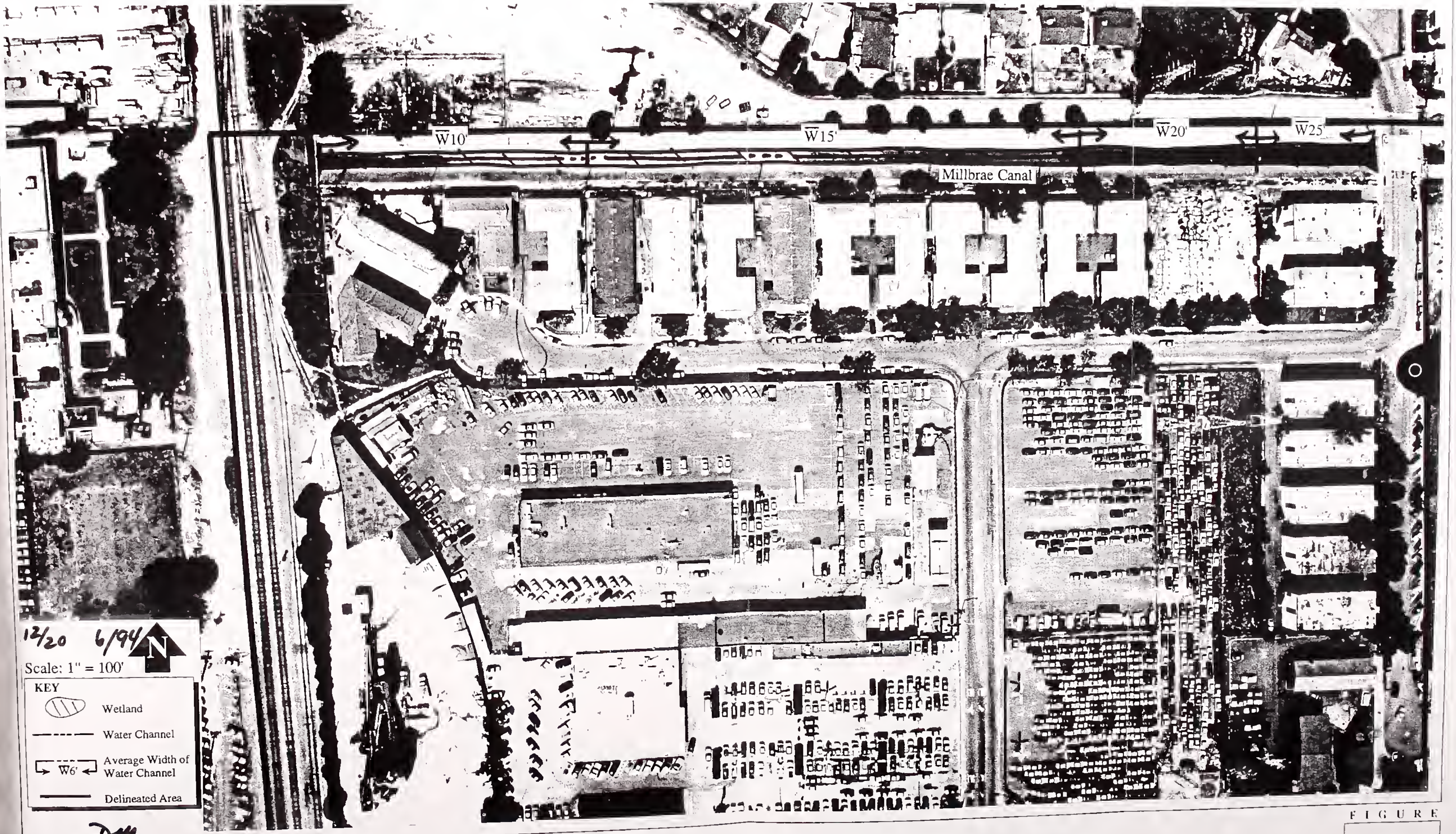


FIGURE 11a

Wetlands & Waters of U.S. on Proposed Alignment of BART Extension to S.F. Airport

OGDEN



12/20 6/94

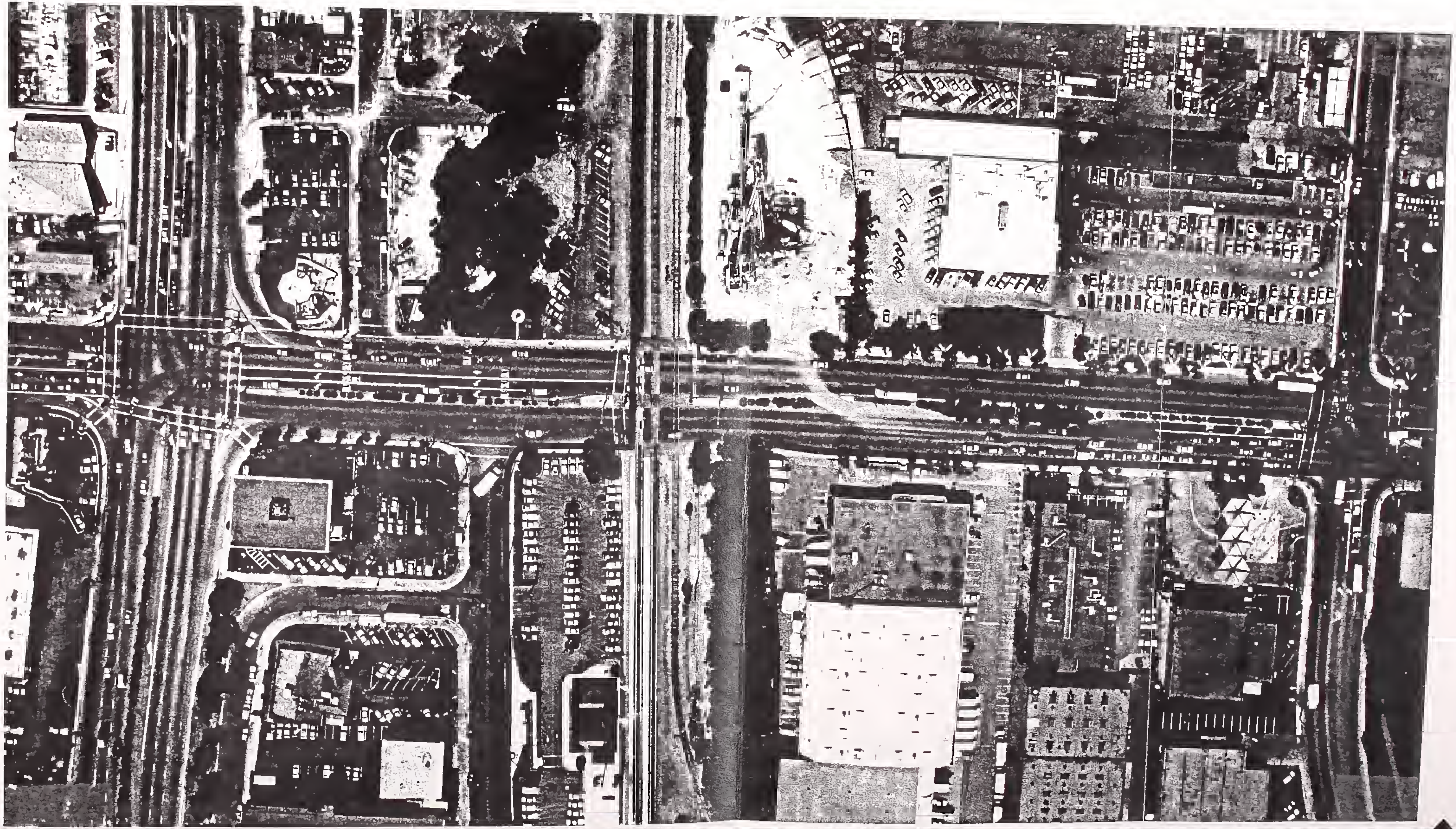
DM

FIGURE

12

Wetlands & Waters of U.S. on Proposed Alignment of BART Extension to S.F. Airport

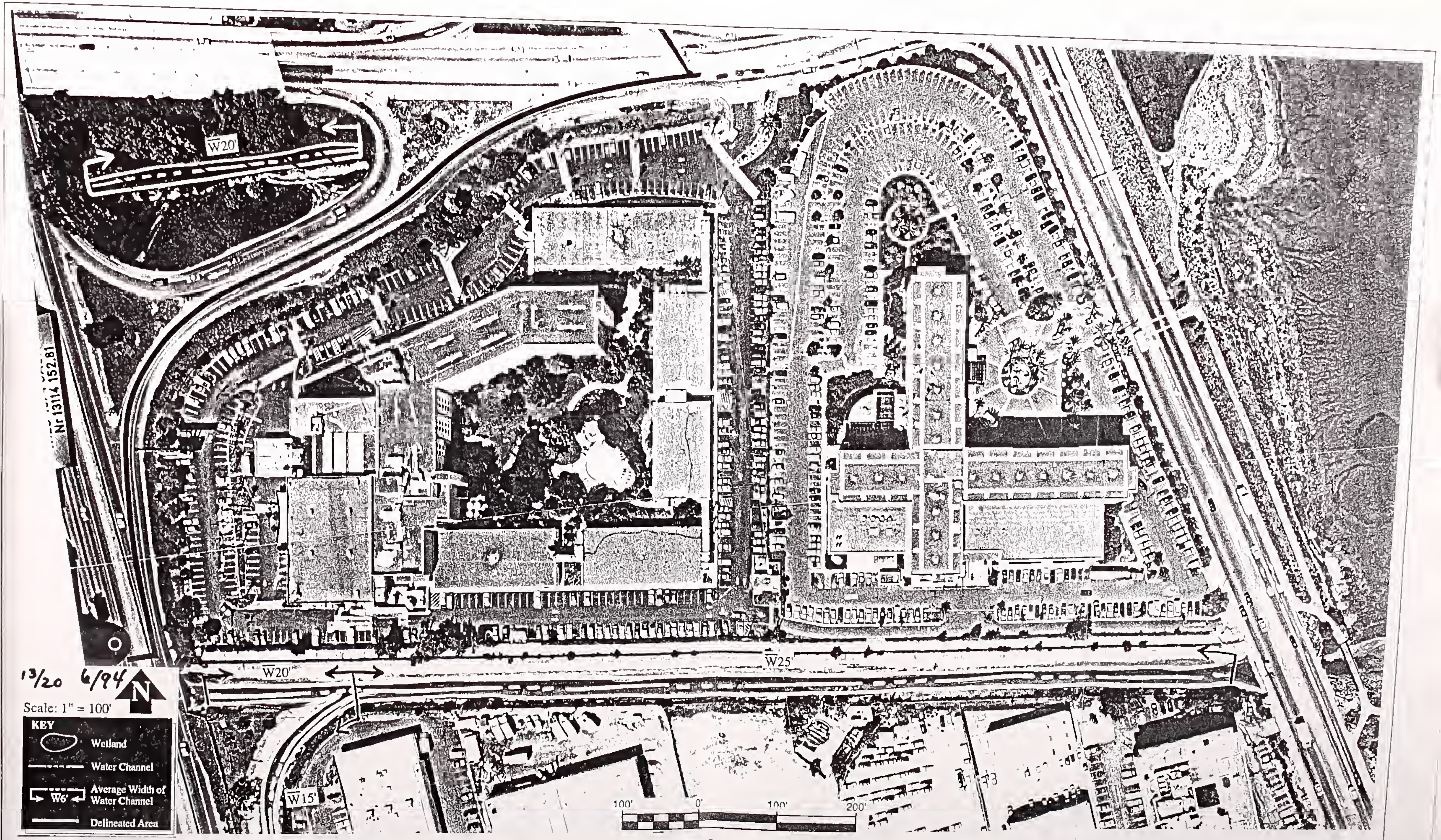
OGDEN



OGDEN

Wetlands & Waters of U.S. on Proposed Alignment of BART Extension to S.F. Airport

FIGURE 12a



13/20 6/94

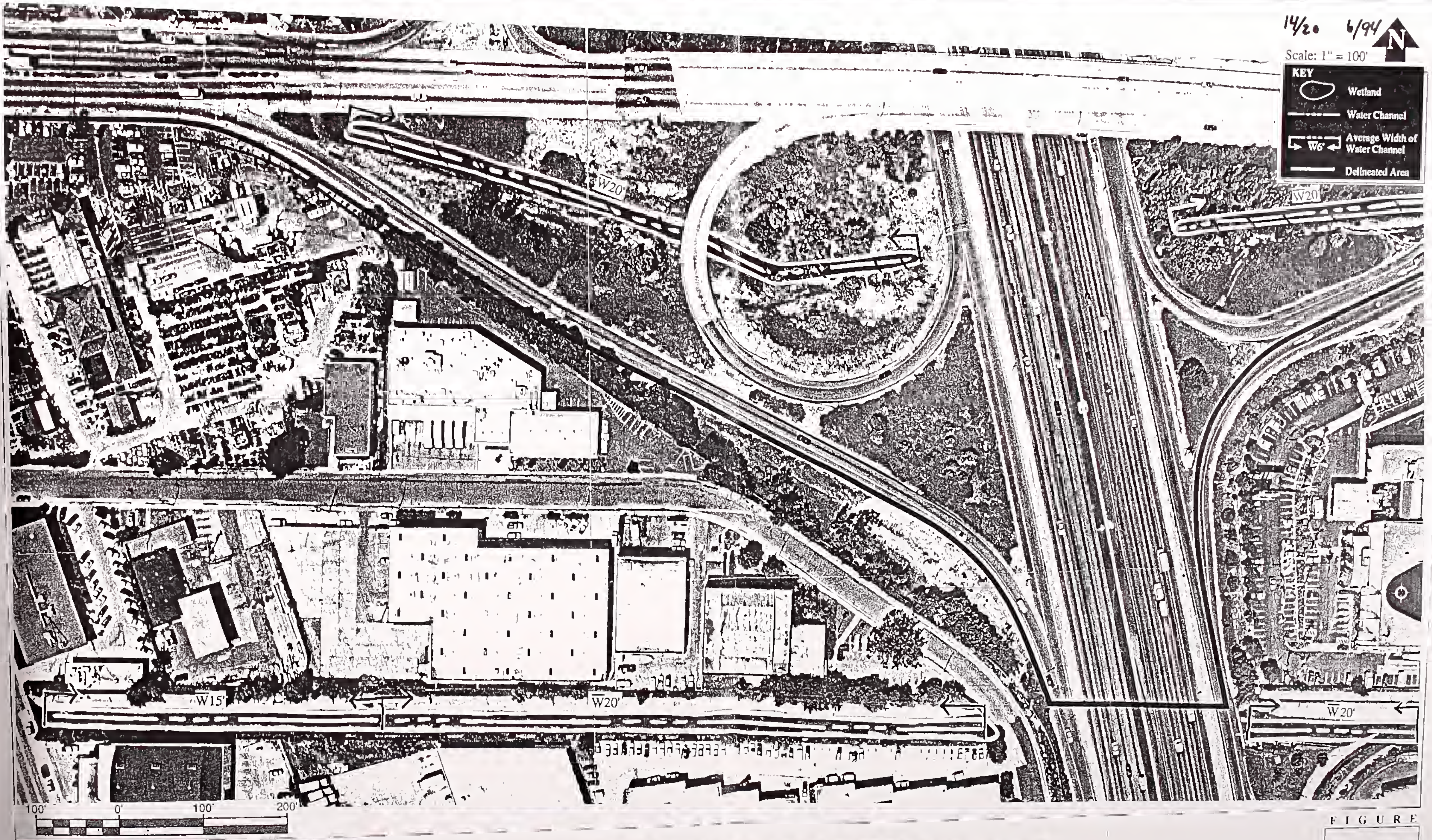
OGDEN

Wetlands & Waters of U.S. on Proposed Alignment of BART Extension to S.F. Airport

FIGURE

13

14/20 6/94



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Wetlands & Waters of U.S. on Proposed Alignment of BART Extension to S.F. Airport

FIGURE

14

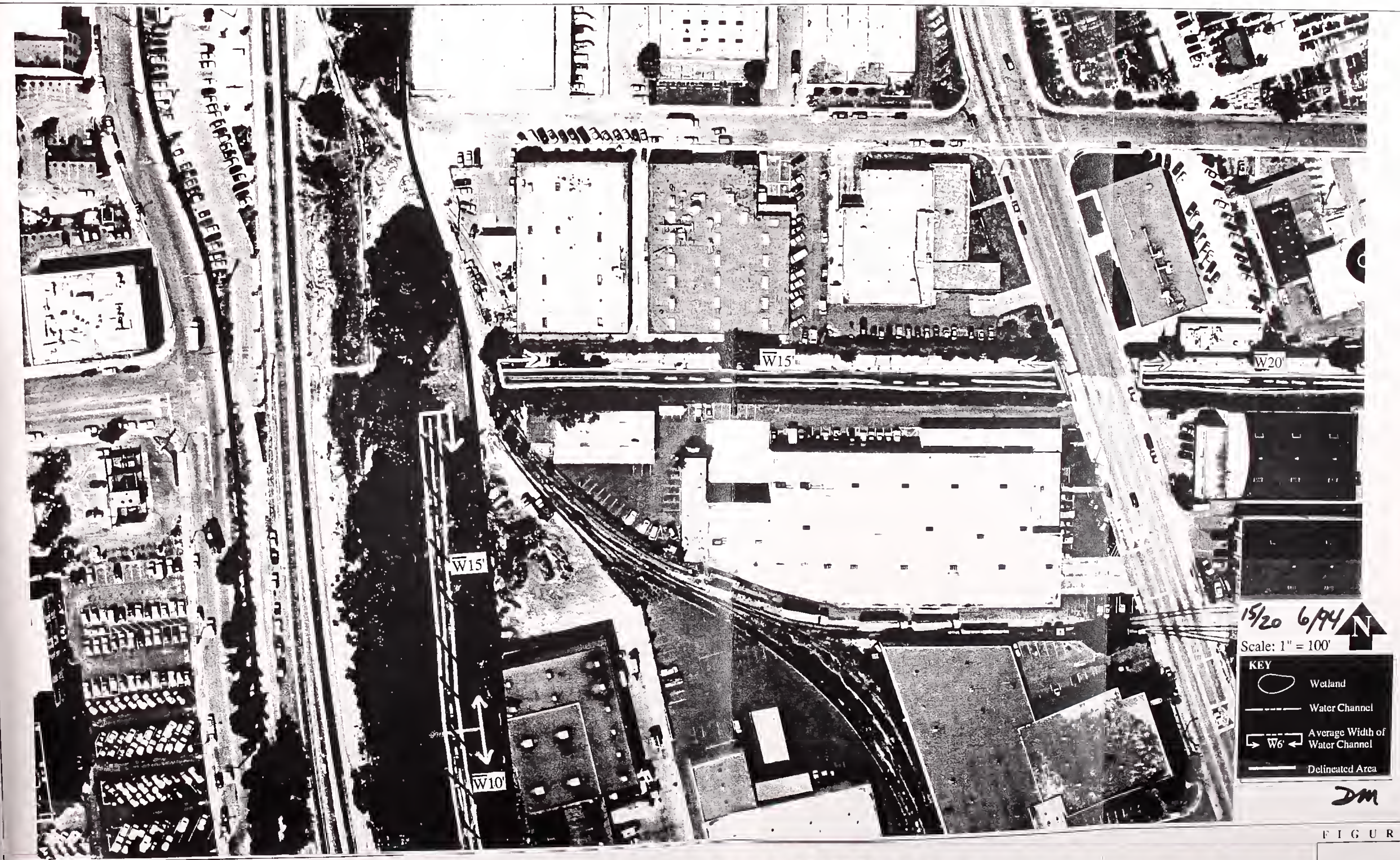

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FIGURE 15

Wetlands & Waters of U.S. on Proposed Alignment of BART Extension to S.F. Airport

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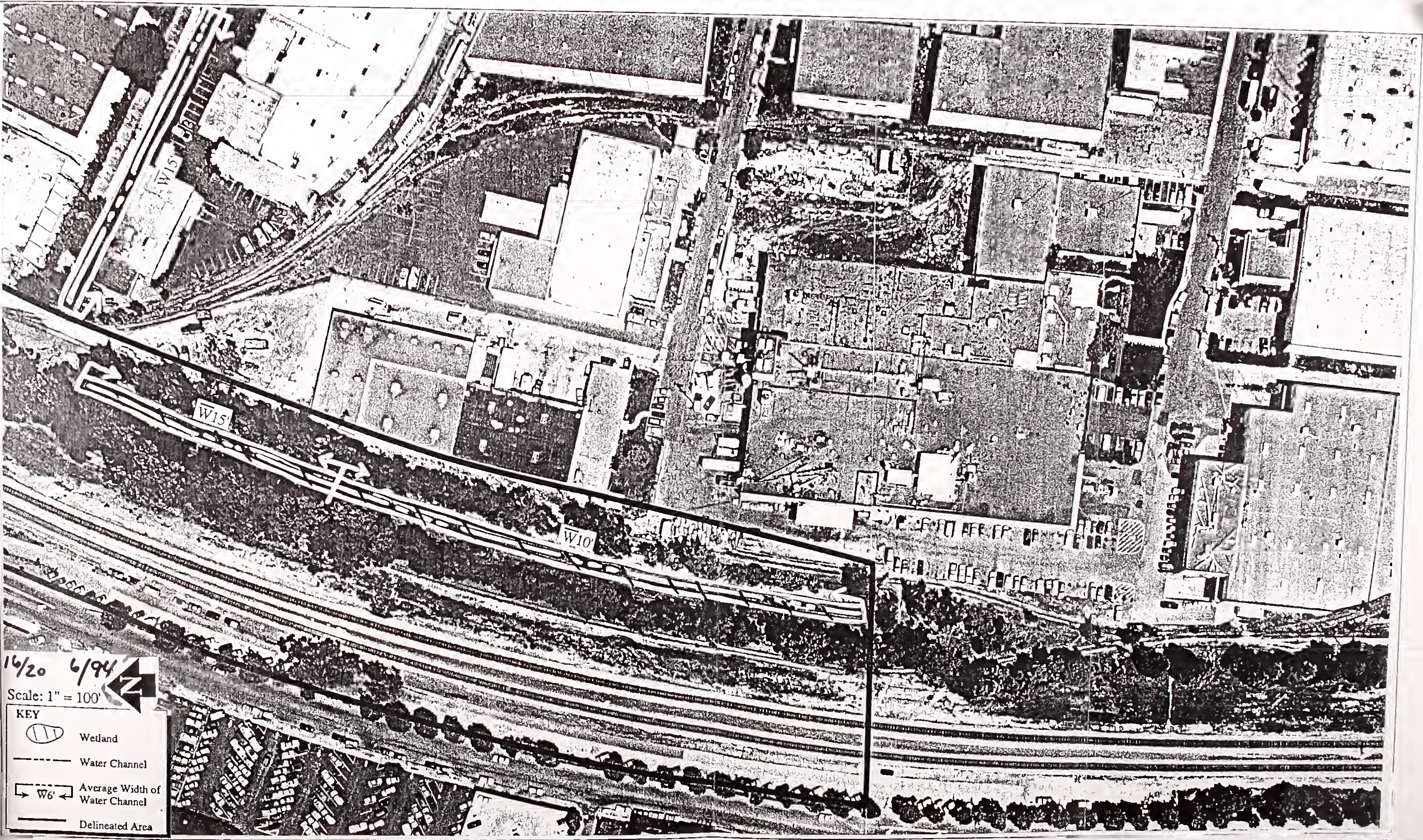

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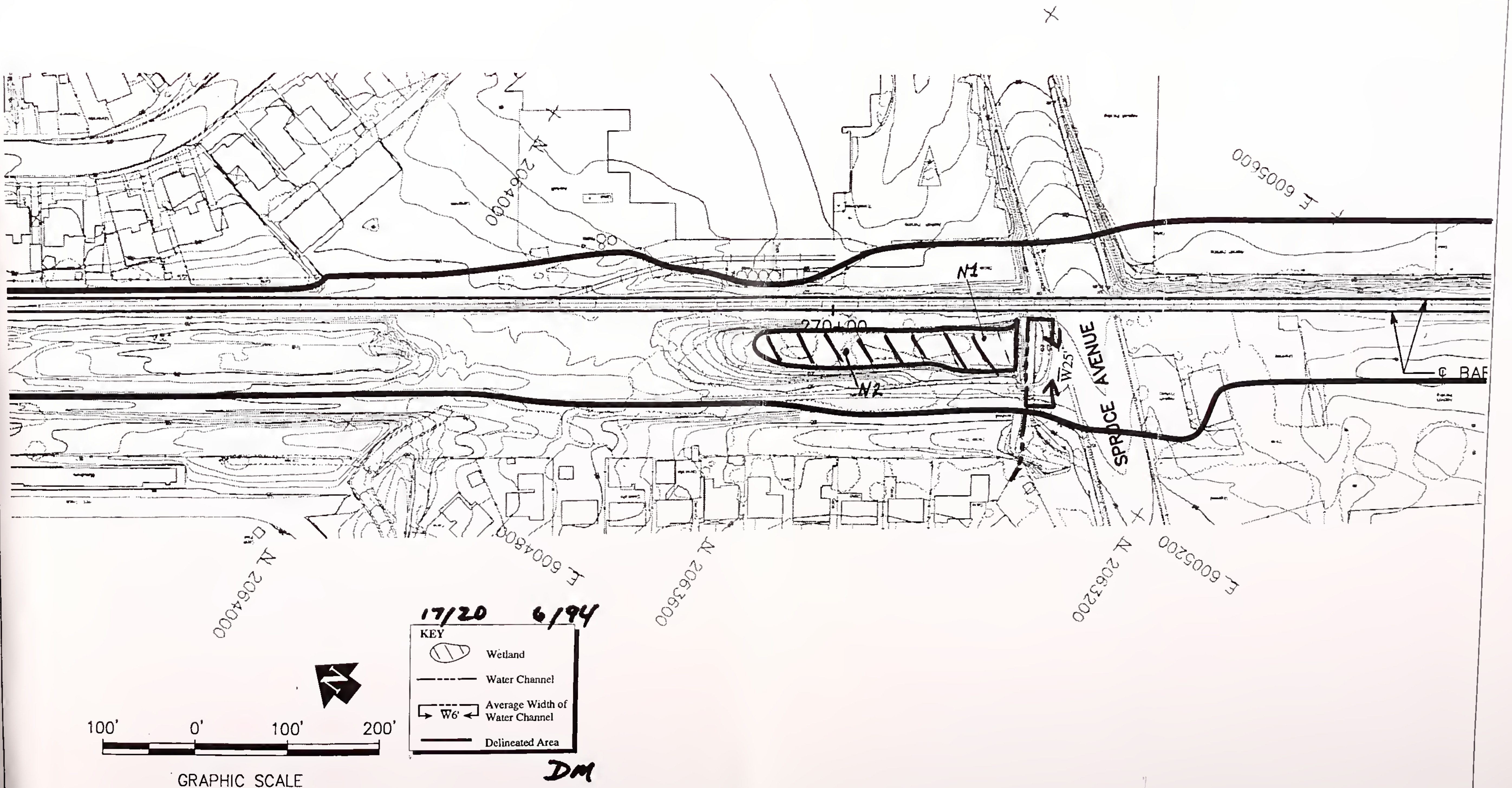
FIGURE

16



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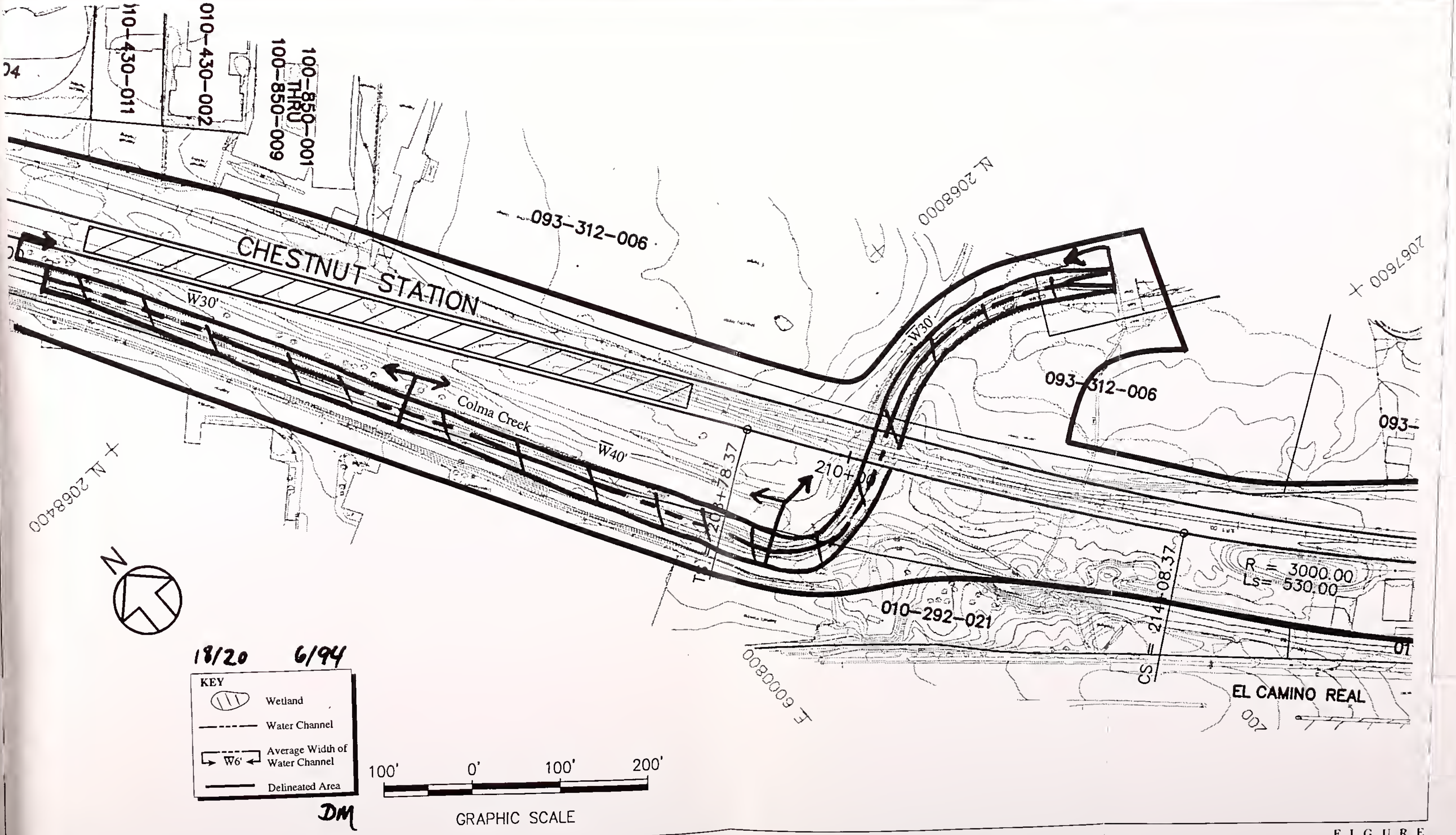
Wetlands & Waters of U.S. on Proposed Alignment of BART Extension to S.F. Airport

FIGURE

17



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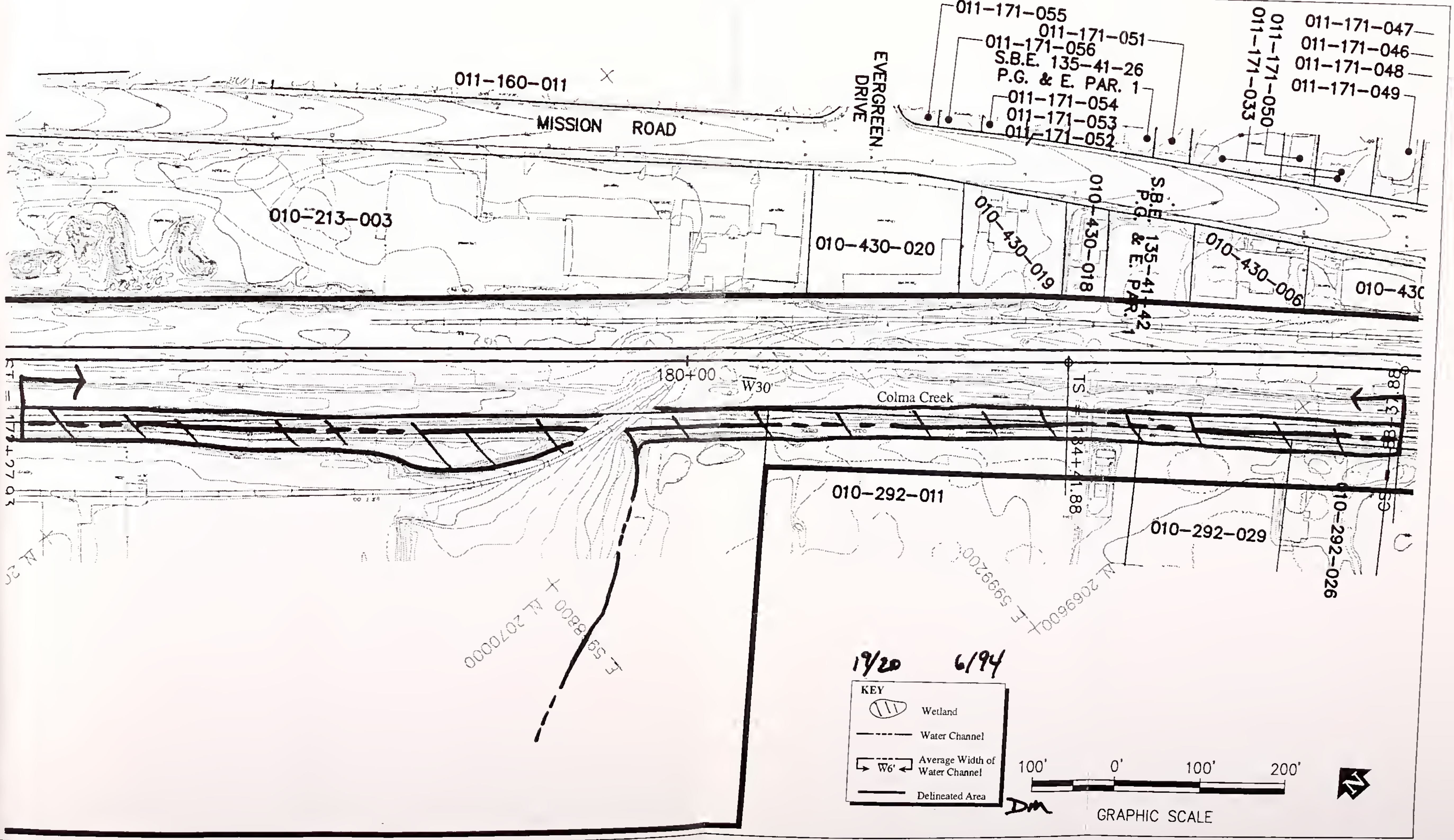
Wetlands & Waters of U.S. on Proposed Alignment of BART Extension to S.F. Airport

FIGURE

18



19/20 6/94

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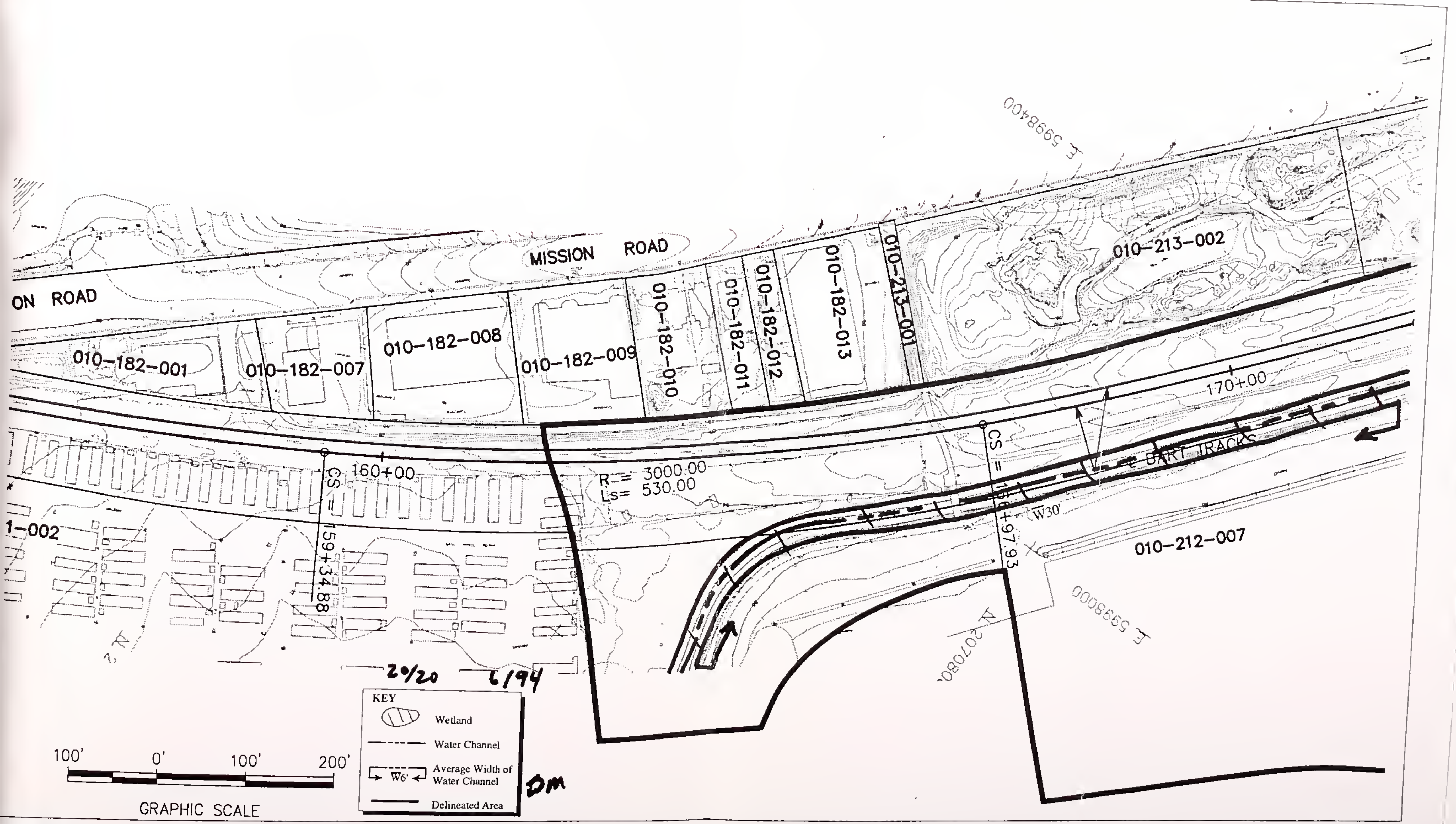
Wetlands & Waters of U.S. on Proposed Alignment of BART Extension to S.F. Airport

FIGURE 19



20/20 6/94

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Wetlands & Waters of U.S. on Proposed Alignment of BART Extension to S.F. Airport

FIGURE

20